REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

EPA ID: TN0001087188 **Site Name:** CHRIS CRAFT **State ID:** 33-662

Alias Site Names:

City: CHATTANOOGA **County or Parish:** HAMILTON **State:** TN 37058

Refer to Report Dated: 05/04/1999 **Report Type:** PRELIMINARY ASSESSMENT 001

Report Developed by: STATE

DECISION:

- [X] **1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**
  - [X] **1a. Site does not qualify for further remedial site assessment under CERCLA (No Further Remedial Action Planned - NFRAP)**
  - [ ] **1b. Site may qualify for action, but is deferred to:**
- [ ] **2. Further Assessment Needed Under CERCLA:**
  - **2a. Priority:** [ ] **Higher** [ ] **Lower**
  - **2b. Other: (recommended action)** NFRAP (No Futher Remedial Action Planned

DISCUSSION/RATIONALE:

Lead-contaminated soil was removed and disposed off-site. The area was then backfilled and covered with 3 feet of engineered backfill. The majority of the population obtain drinking water from the Tennessee American Water Company which obtains water from the Tennessee River located upstream for the Site. There are no surface water intakes within the surface water pathway.

Site Decision Made by:

Signature: _____ **Date:** 08/30/1999

EPA Form # 9100-3

Rec'd 6/4/99

Executive Summary
Chris Craft Corporation
TN000 1087188

Attached is the Preliminary Assessment (PA) for Chris Craft Corporation. The Chris Craft building is located at 3321 Dodds Avenue in the city of Chattanooga, Hamilton County, Tennessee. The surrounding area is urban with residential and commercial development. The total area of the property is approximately 10.5 acres. The site is bounded to the north by East 32nd Street and east by Dodds Avenue and to the south by a city park (Darwin Field). A railroad track is immediately west of the site. A large building housing Cherokee Building Materials is situated on the north part of the property. A large portion of the site is being excavated for construction of a school.

The site and surrounding area has been used for industrial purposes since 1900. Richmond Spinning Mill occupied the site from 1900 until 1937. Chris Craft Industries, Inc. began operations on the site in 1947. Chris Craft manufactured wooden and fiberglass boats from 1947 until the plant closed in 1975. Cherokee Warehouses, Inc. purchased the site from Chris Craft in 1977. Cherokee Warehouses uses the main plant building as a building materials warehouse. In June of 1998, Cherokee Warehouse sold a part of the site property to Hamilton County. Hamilton County began construction of a school on the property in the summer of 1998. During foundation excavation for the school, an area was discovered containing what appeared to be lead based paint. Approximately 1,235 tons of lead contaminated soil was removed and disposed of at Environmental Quality Control Company of Belleville, Michigan. Analytical information provided by Ground Engineering and Testing Service indicates that all of the lead contaminated soil has been removed.

Unpermitted disposal of hazardous substances has occurred on the site. The construction of the school and the removal of contaminated soil has eliminated the threat to human health or the environment.

Preliminary Assessment
Narrative Report

Chris Craft Corporation
Chattanooga, Hamilton County, Tennessee

CERCLIS Number: TN0001087188
Tennessee File Number: 33-662

Prepared for the
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SUPERFUND
in cooperation with
WASTE MANAGEMENT DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

DATE: May 4, 1999

Prepared by
Paul Bradshaw

Paul Bradshaw

Reviewed by
John Weakley

John T Weakley
6/1/1999

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LIST OF FIGURES

ATTACHMENTS

REPORT: Preliminary Assessment
Narrative Report

SITE: Chris Craft
Chattanooga, Hamilton County, Tennessee

CERCLIS NO.: TN0001087188

TN FILE NO.: 33-662

PREPARED BY: Paul T. Bradshaw, Environmental Specialist
Tennessee Department of Environment and Conservation
Division of Superfund (TDEC-DSF)

DATE: May 3, 1999

1.0 INTRODUCTION

The Tennessee Division of Superfund (TDSF), under cooperative agreement with the U.S. Environmental Protection Agency (EPA), conducted a Preliminary Assessment (PA) of the former Chris Craft Boat Manufacturing Plant (CC) in Chattanooga, Hamilton County, Tennessee. This investigation was performed under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA).

1.1 Objectives

The purpose of this investigation was to collect information concerning conditions at the site and assess any threat to human health and the environment; to identify, if possible, sources which could be attributed to known site contamination; and to determine the need for further investigation under CERCLA/SARA or other authority.

1.2 Scope of Work

- The objectives were achieved through the completion of the following tasks:
- Review of available information;
- A comprehensive target survey;
- On-site reconnaissance;

Guidance for this Preliminary Assessment was given through CFR 40, Part 400.

2.0 SITE CHARACTERIZATION

2.1 Location

The Chris Craft plant is located at 3321 Dodds Avenue in the city of Chattanooga, Hamilton County, Tennessee. The geographic coordinates of the site are 35° 00′ 10″ north latitude and 85° 16′ 53″ west longitude (Fig. 1). The location of the site is approximately 690 feet above sea level (Ref. 1). The grounds of the property do not lie inside a flood plain (Ref. 2). The site and surrounding areas are situated in Congressional District 3 (Ref. 3).

To reach the site from Chattanooga, travel east on Interstate 24 to the South Roseville Blvd. exit. Go south on Rossville Blvd. to East 34th Street. Turn left on to East 34th Street and continue on 34th street until it intersects Dodds Avenue. Turn left onto Dodds Avenue. The facility is located at the intersection of Dodds Avenue and East 33rd Street.

This area of Hamilton County, Tennessee is climatologically characterized by moderate winters and hot summers. The average winter temperature is approximately 41° F, and the average summer temperature is approximately 74° F. Rainfall data indicates an average annual precipitation depth of approximately 58 inches and a 1 year 24 hour rainfall event of 3.0 inches (Ref. 4). Rainfall distribution is fairly even throughout the year with fall being the driest season and winter being the wettest (Refs. 4,5).

2.2 Site Description

The total area of the property is approximately 10.5 acres. The site is bounded to the north by East 32nd Street and east by Dodds Avenue and to the south by a city park (Darwin Field). A railroad track is immediately west of the site (Figures 2 & 3). A large building housing Cherokee Building Materials is situated on the north part of the property. A large portion of the site is being excavated for construction of a school.

2.3 Site History

Information obtained from the Hamilton County Bicentinail Library demonstrated that the site and surrounding area has been used for industrial purposes since 1900. Chattanooga Times newspaper clippings and Chattanooga City Directories indicated that Richmond Spinning Mill operated on the site from 1900 until 1937. Richmond Spinning Mill manufactured yarn for hosiery and employed approximately 125 workers in 1900. Chris Craft Industries, Inc. began operations on the site in 1947. Chris Craft manufactured wooden and fiberglass boats from 1947 until the plant closed in 1975 (Refs. 6&7).

Cherokee Warehouses, Inc. purchased the site from Chris Craft in 1977. Cherokee Warehouses uses the main plant building as a building materials warehouse. In June of

1998, Cherokee Warehouse sold a part of the site property to Hamilton County. Hamilton County began construction of a school on the property in the summer of 1998 (Ref. 8).

During foundation excavation for the school, an area was discovered containing what appeared to be lead based paint. Approximately 1,235 tons of lead contaminated soil was removed and disposed of at Environmental Quality Control Company of Belleville, Michigan (Refs. 9 & 10).

3.0 GROUND WATER PATHWAY

3.1 Hydrogeologic Setting

Hamilton County lies in the western part of the Valley and Ridge Physiographic province and in the eastern part of the Cumberland Plateau. The topography of the eastern three-fourths of the county is mountainous, but that of the western fourth is characterized by alternating ridges and valleys. Elevations range from 640 to 2,146 feet above mean sea level (amsl). Geologically, this area is characterized by faulted and folded sedimentary deposits of the Paleozoic age. Typically, the rocks dip to the southeast and parallel ridges and valleys trend northeast. The majority of the Valley and Ridge is underlain by limestone and dolomite of the Knox and Chickamauga groups. These formations typically exhibit karst weathering patterns. The lower part of the Chickamauga Supergroup is the first geologic formation encountered under the site. The depth to the Chickamauga is estimated to be 10-20 feet under the top of the overlying clay residium. The lower part of the Chickamauga Supergroup consists of fine grained, fairly light colored, and slightly silty limestone. Weathering of the formation typically produces pinnacles and "floating" blocks of limestone in the overlying residium. The depth of the Chickamauga Group is estimated to be 900 feet under the site. Ground water is typically restricted to fractures that have been enlarged by solution. Perched water is typically found at the soil/rock interface.

Ground water in Hamilton County occurs in fractures in the underlying rocks. Where the rocks are calcareous the fractures are frequently enlarged by solution, but fractures in the siliceous rocks have been altered very little. Depth to ground water is estimated to be 25 to 35 feet below ground level (Refs. 11 & 12).

3.2 Ground Water Targets

The majority of the population within the study area is serviced by the Tennessee American Water Company, which obtains water from the Tennessee River. Several industrial water wells are located in the vicinity of the site. None of these wells are used for drinking water (Refs. 13, 14 & 15).

3.3 Ground Water Conclusions

Due to past uses of the site, releases to ground water may have occurred. However, it is very unlikely that drinking water supplies have been impacted.

4.0 SURFACE WATER PATHWAY

4.1 Hydrologic Setting

The site is not located in a flood plain (Ref.2). Overland drainage from the Chris Craft site flows into a Chattanooga City WPA ditch, then at approximately South Hickory Street it flows into Dobbs Branch. Dobbs Branch empties into Chattanooga Creek at approximately creek mile 2 (Ref. 16). The approximate flow of Chattanooga Creek is 125 cubic feet per second. Chattanooga Creek flows to the west and empties into the Tennessee River (Nickajack Lake) at river mile 460.6. The flow of the Tennessee River is estimated to be 36,550 cubic feet per second (Ref. 17). The 15-mile Surface Water Pathway is shown on Figures 4&5.

4.2 Surface Water Targets

There are no surface water intakes located within the 15-mile downstream segment. The Tennessee American Water Company supplies drinking water to the entire Chattanooga, Rossville and East Ridge areas (all residents within a 4 mile radius of the site) (Ref. 18). The raw water intakes for this system are located at river mile 465.4, approximately 4.8 miles upstream from the confluence of Chattanooga Creek and the Tennessee River.

Chattanooga Creek is used for fishing and recreational purposes (Ref. 19). Eventhough, the Chattanooga Creek is classified as not supporting those activities and warnings have been posted regarding physical contact and consumption of fish, indigent persons have been known to consume the creek's water and fish. It is estimated that 20 lbs./year of fish are harvested from Chattanooga Creek (Ref. 20).

The Tennessee River is used for fishing, recreational and navigational purposes (Ref.18). Aquatic species commonly caught along the Tennessee River include bass, catfish, and blue gill. An estimated 3,000 lbs/year of fish are harvested from the Tennessee River in the Chattanooga area (Ref.20). Williams Island, a wildlife refuge is located at approximately mile 10 along the site's surface water pathway. Several federally listed endangered species are found in Hamilton County and may be found along the site's surface water pathway. These species include the: Dromedary Pearly mussel, the Pink Mucket, the Orange-foot Pimplejack, Cumberland Monkeyface, the Bald Eagle, and the Peregrine Falcon (Ref. 22).

4.3 Surface Water Conclusions

It is very unlikey that the site is currently impacting the surface water pathway.

5.0 SOIL EXPOSURE AND AIR PATHWAYS

5.1 Physical Conditions

The Chris Craft Site is located in the Southern Appalachain Ridges and Valleys Major Land Resource Area. Soils in the Southern Appalachian Ridges and Valleys area are moderately deep or deep over limestone and shale bedrock. (Ref. 5).

Soils situated on site consist of the Colbert-Urban land complex. Soils of this complex are deep, moderately well drained, gently sloping and sloping Cobert soils and Urban land. The Urban land part of this complex have been covered by buildings, streets, parking lots, sidewalks and other structures (Ref. 5).

5.2 Soil and Air Targets

The site is currently active. Approximately 10 workers are present on site. A school is presently under construction immediately south of the old boat manufactuing plant on property that was once owned by Chris Craft and Cherokee Warehouses. Hamilton County purchased the property from Cherokee Warehouses in June 1998. Historical fire insurance maps indicate that a warehouse and resivour were located on the County property. Durring construction activities a large amount of scrap wood was excavated. Additional excavation of the school on property south of the Chris Craft plant revealed an area that appeared to contain old paint. The paint was found in what appeared to be small wooden kegs. Approximately 1235 tons of lead contaminated soil was disposed of at Environmental Quality Control Company of Belleville, Michigan. Soil samples taken after this removal indicated that the cleanup was successful. No other hazardous substances were found in the disposal area. The actual source of the paint has not been determined. The apparent age of the containers indicate that the paint may have been deposited prior to Chris Craft occupation of the property. 1500 people live within a 1/4-mile radius of the site. The total number of residents within a 4-mile radius of the site is approximately 58,403 (Ref. 23).

5.3 Soil Exposure and Air Pathway Conclusions

Releases to the soil have occurred in the past. However, approximately 1235 tons of soil were removed. Analytical information provided by Ground Engineering and Testing Service indicates that all of the lead contaminated soil has been removed. The school property will be covered by buildings or asphalt/concrete paving. Because of the removal

activity and construction of the school, the soil exposure pathway at the Site appears to pose a minimal threat. The Air Pathway does not appear to be threatened at this time.

Based on the report submitted by Ground Engineering and Testing Service it appears that all of the lead contaminated soil was removed and groundwater was not impacted. The area of contamination has been backfilled and covered with 3 feet of engineered backfill. The area will be covered by school buildings and or parking areas after the construction is complete.

6.0 SUMMARY AND CONCLUSIONS

Excavation associated with school construction demonstrated that unpermitted disposal activities have occurred on or near the Chris Craft Property. However, these activities have had minimal impact on human health and the environment. The removal of lead contaminated soil has eliminated the only known environmental hazard on the site.

REFERENCE LIST

1. U. S. Geological Survey. Chattanooga/East Chattanooga/East Ridge/Ft. Oglethorpe Quadrangles, 7.5 Minute Series (Topographic). 1957 &1988.

2. National Flood Insurance Program Flood Insurance Rate Map City of Chattanooga, Tennessee Hamilton County. Panel 26 of 30. September 3, 1980.

3. State of Tennessee. Tennessee Blue Book 1991-1994. 1991.

4. U.S. Department of Commerce. "Rainfall Frequency Atlas of the United States, Technical Paper No.40". May 1961.

5. USDA. 1982. Soil Survey of Hamilton County, Tennessee. United States Department of Agriculture, Soil Conservation Service.

6. Hamilton County, Tennessee. Bicentinial Library. Chattanooga City Directories

7. Hamilton County, Tennessee. Bicentinial Library. Newspaper Clippings

8. Hamilton County, Tennessee. Register of Deeds. Property Deed

9. Chattanooga Times. 10/08/98

10. Ground Engineering and Testing Service Report Project # 1412-A.

11. DeBuchananne, Richardson. Tennessee Divison of Geology, Groundwater Resources of East Tennessee, Bulletin 58, 1956.

12. Tennessee Division of Geology. Geologic Map of the Chattanooga Tennessee Quadrangle.

13. Caruthers, G. (TDHE) Memo regarding private wells in Chattanooga. November 25, 1986

14. Tennessee Division of Water Supply. "Public Water System Data/Tennessee American Water Company". December 5, 1990.

15. Stannard, C.J. (TDGWP). Memo regarding industrial wells in Chattanooga, TN. November 19, 1987.

16. City of Chattanooga. Department of Public Works. Letter regarding stormwater drainage East Lake Middle School.

17. U.S. Department of Interior, Geological Survey. 1970-1974. "Water Resources Data for Tennessee".

18. Stannard, C.J. (TDSF) Memo regarding wetlands and stream flow. April 24, 1992.

19. State of Tennessee Water Quality Standards. December 1991.

20. Tennessee Wildlife Resources Agency. "Creel Data For Nickajack Lake". 1991.

21. Speer, I.M. (TDSF) Memo regarding fish harvest from local fisheries. October 20, 1996.

22. Tennessee Ecological Services Division. "Endangered Species of Hamilton County", January 31, 1989.

23. Lan View II Population Data Report

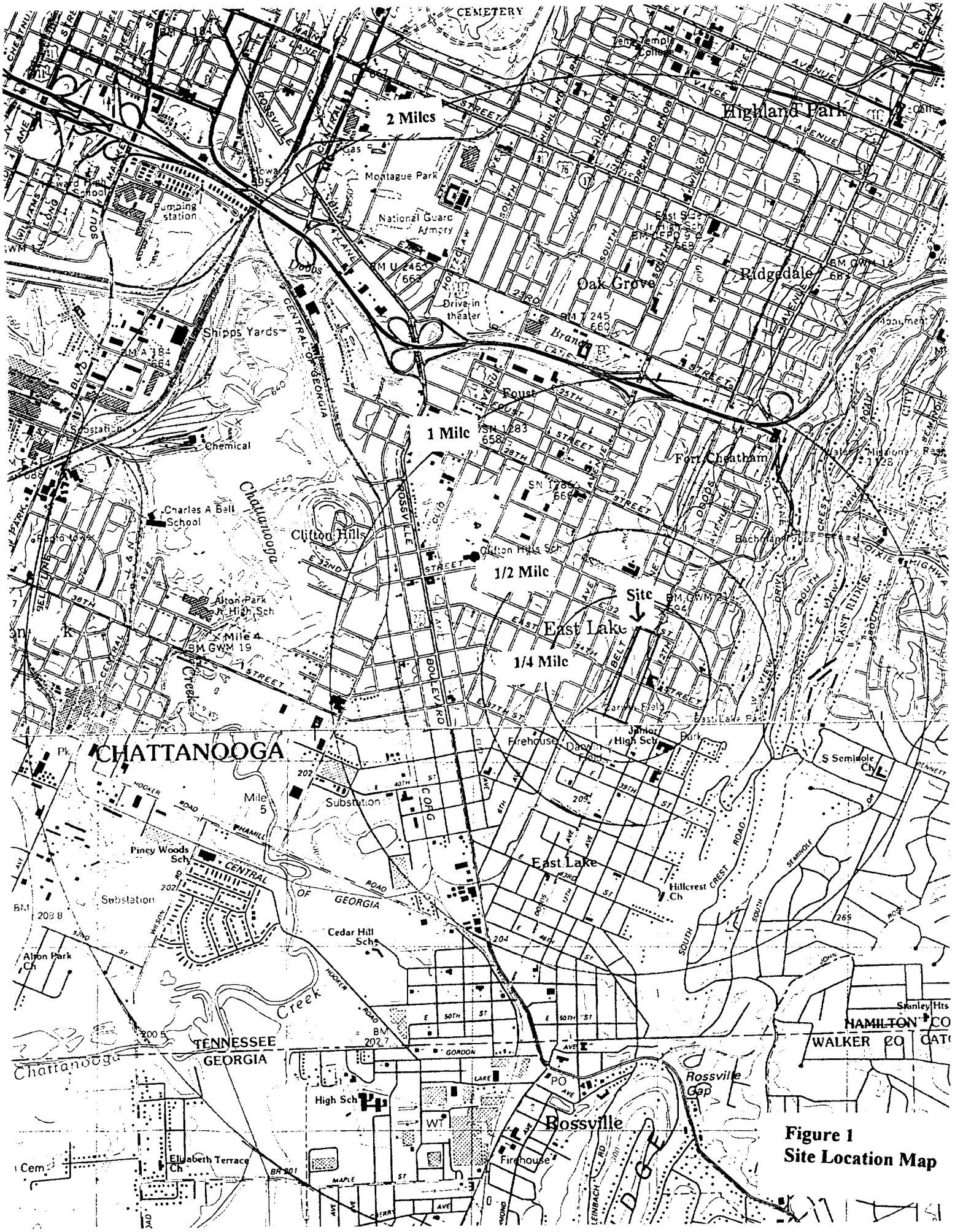


Figure 1
Site Location Map

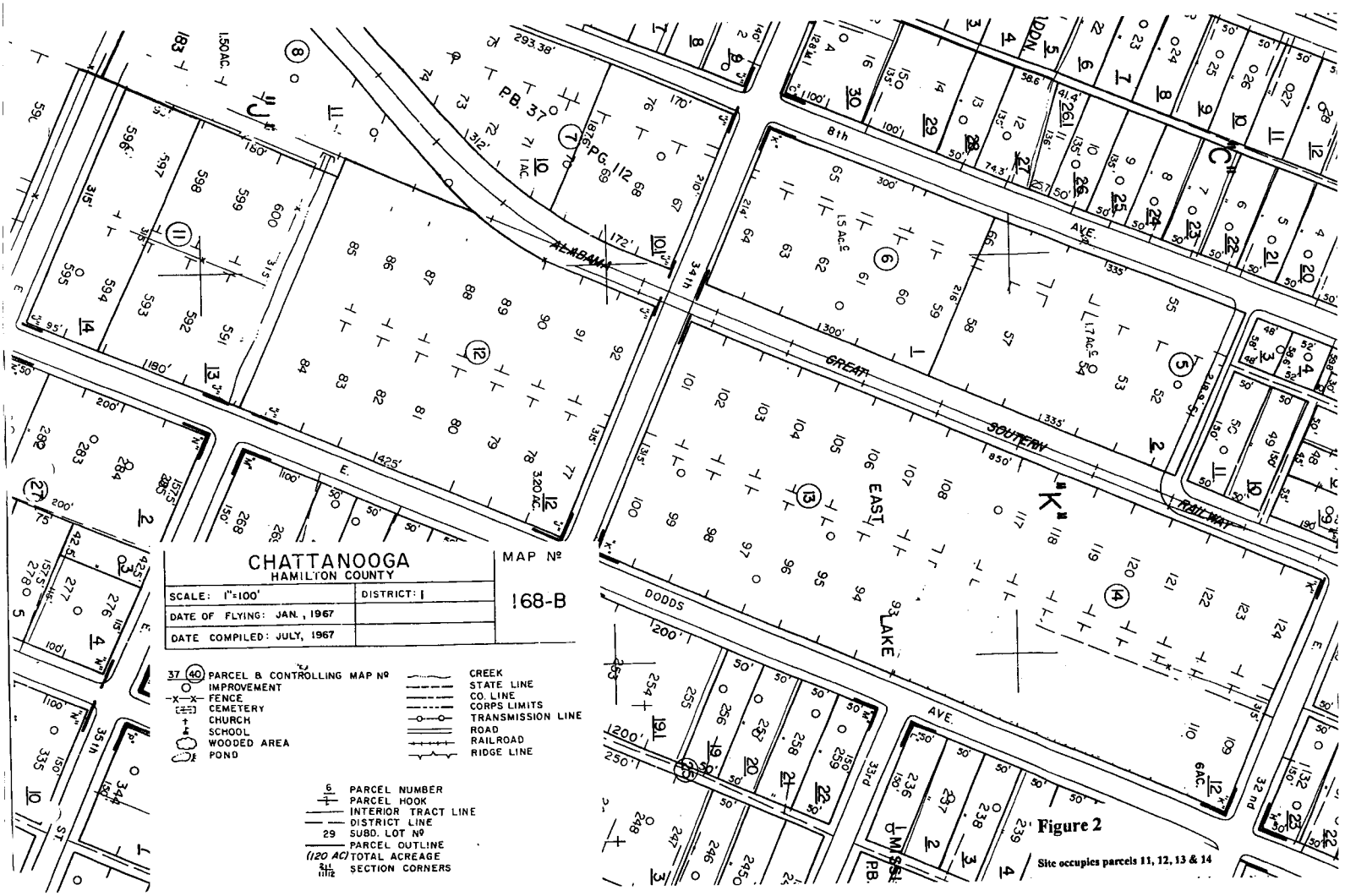
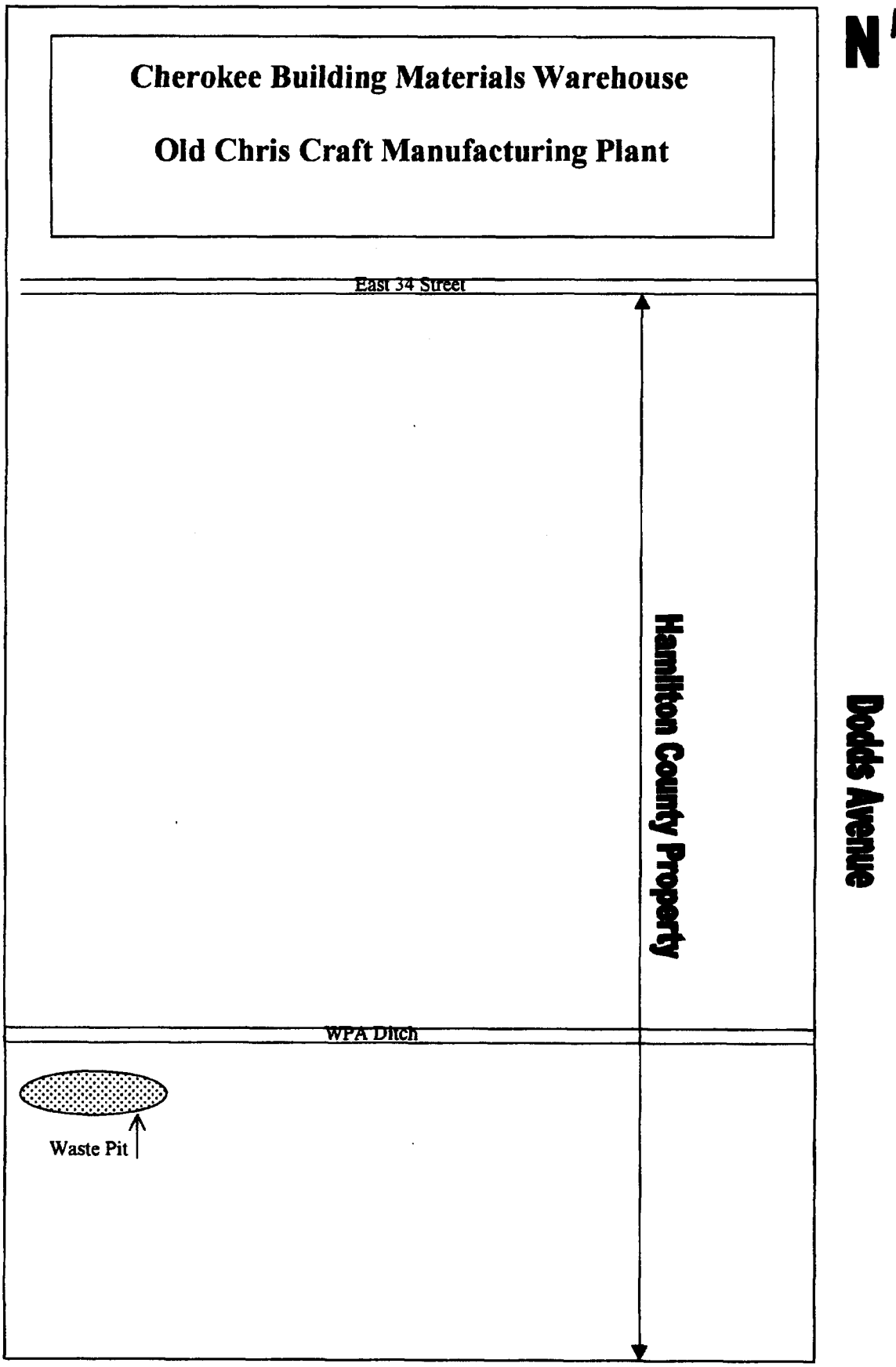


Figure 2

Site occupies parcels 11, 12, 13 & 14



Site Sketch

Chris Craft Manufacturing
TN0001087188
TN File # 33-662

NOT TO SCALE

Figure 3

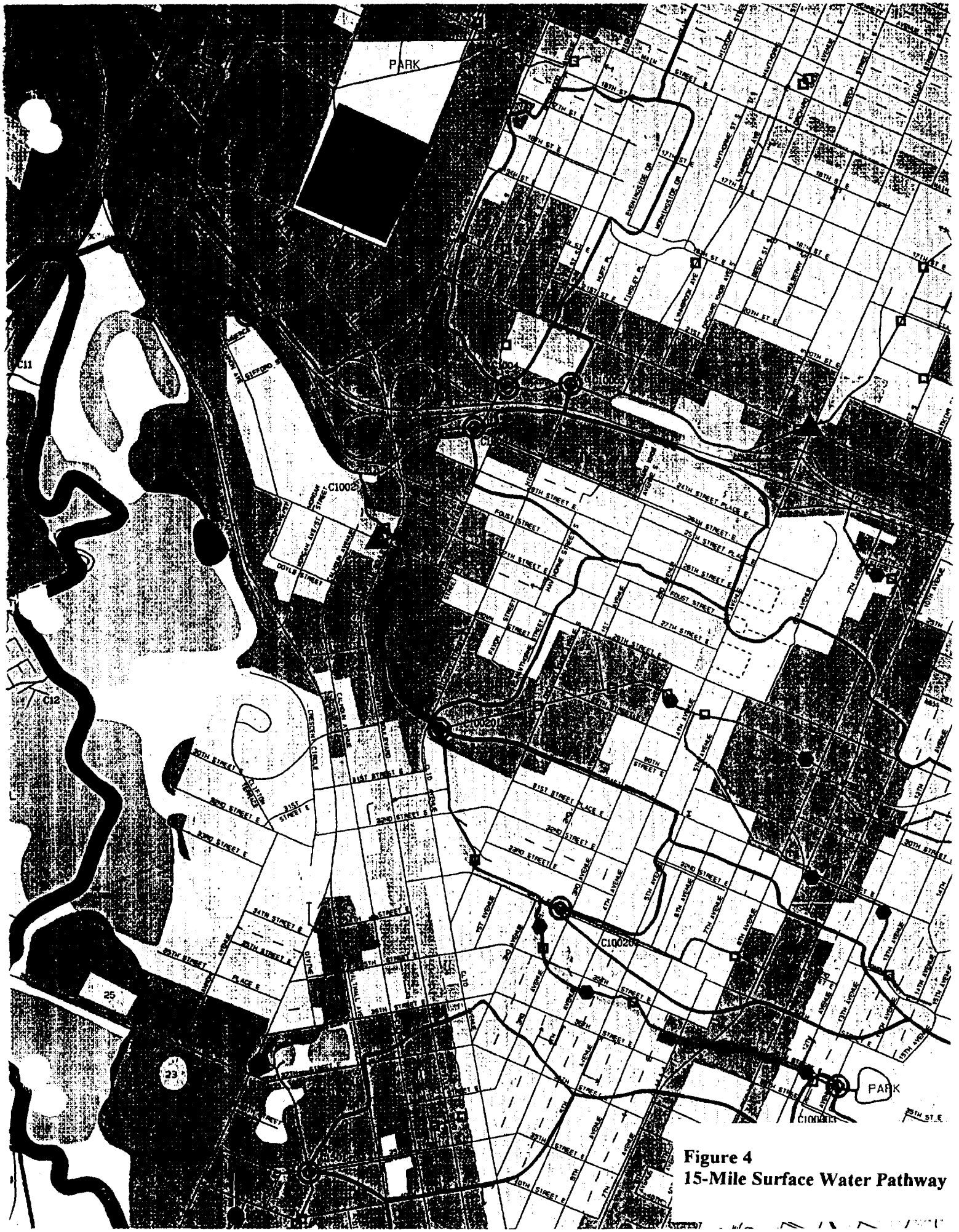


Figure 4
15-Mile Surface Water Pathway

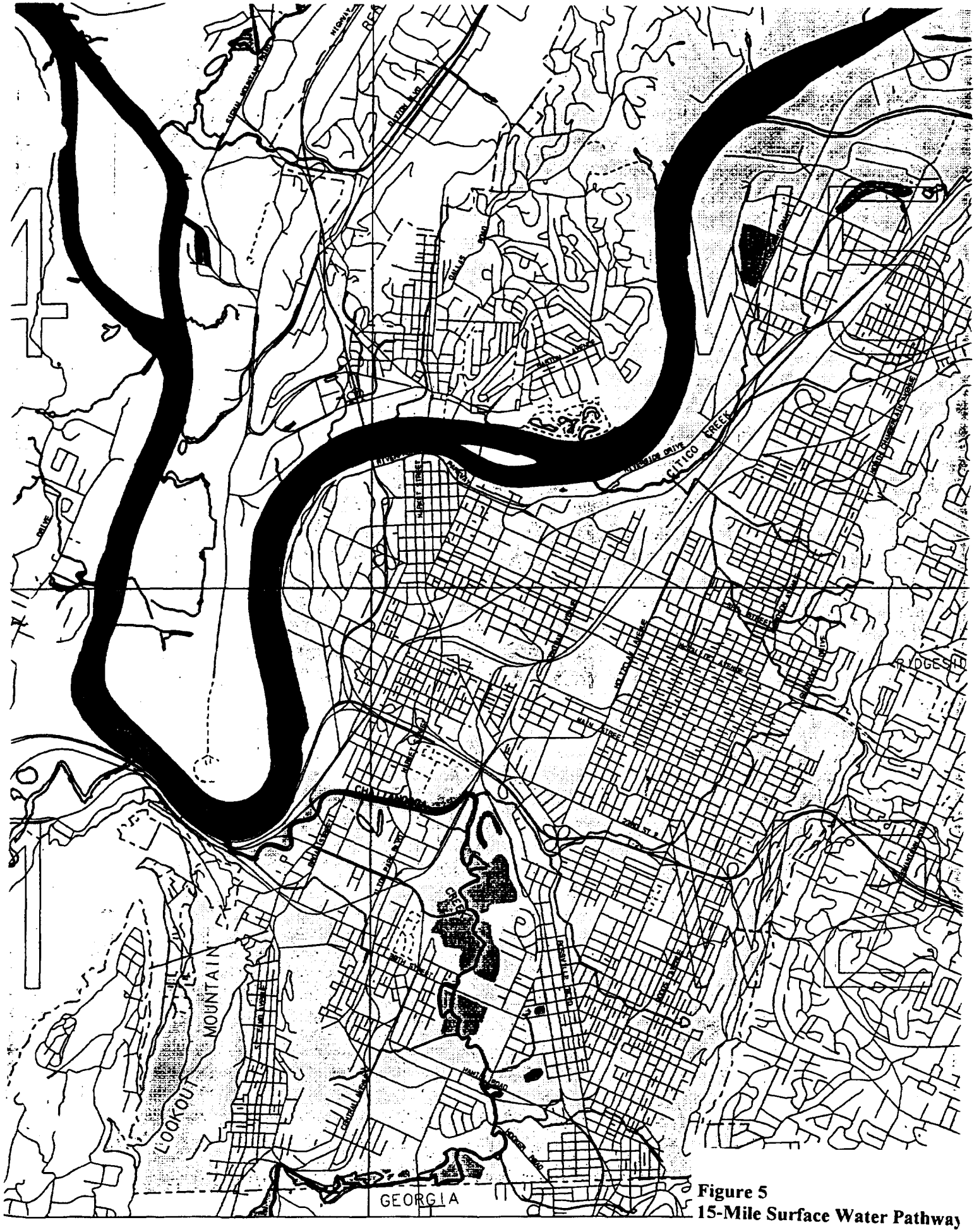


Figure 5
15-Mile Surface Water Pathway

UNSCANNABLE

MEDIA

(PHOTOGRAPHS)

Site No. TN0001087188

Ref. No. 1

Four Mile Radius Map

See Appendix C

Site No. TN0001087188

Ref. No. 2

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
CHATTANOOGA,
TENNESSEE
HAMILTON COUNTY

PANEL 27 OF 30
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY–PANEL NUMBER:
470072 0027 B
MAP REVISED:
OCTOBER 16, 1992

Federal Emergency Management Agency

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year flood plain.

ZONE D Areas in which flood hazards are undetermined.

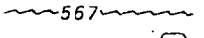
UNDEVELOPED COASTAL BARRIERS

Flood Boundary

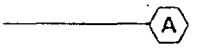
Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zone.



Base Flood Elevation Line; Elevation in Feet*



Cross Section Line

(EL 19) Base Flood Elevation in Feet Where Uniform Within Zone*

RM5 Elevation Reference Mark

M3.0 Mile Mark

renced to the National Geodetic Vertical Datum of 1929

NOTES

nap is for use in administering the National Flood Insurance Program; it not necessarily identify all planimetric features outside Special Flood Hazard or all areas subject to flooding, particularly from local drainage sources all size.

of Special Flood Hazard (100-year flood) include zones, A, AE, A1-A30, AO, A99, V, VE and V1-V30.

n areas not in Special Flood Hazard Areas may be protected by flood control ures.

daries of the floodways were computed at cross sections and interpolated en cross sections. The floodways were based on hydraulic considerations egard to requirements of the Federal Emergency Management Agency.

way widths in some areas may be too narrow to show to scale. Refer to way Data Table where floodway width is shown at 1/20 inch.

l base flood elevations apply only landward of the shoreline.

nap incorporates approximate boundaries of coastal barriers established the Coastal Barrier Resources Act (PL 97-348).

rate limits shown are current as of the date of this map. The user should l appropriate community officials to determine if corporate limits have ed subsequent to the issuance of this map.

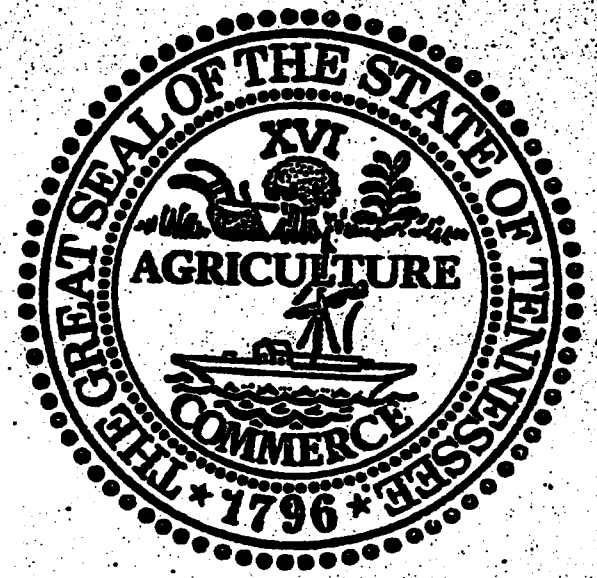
joining panels, see separately printed Map Index.


ZONE X
30TH STREET
29TH STREET
2ND AVENUE
3RD AVENUE
5TH AVENUE
PLACE
47TH STREET
EAST 32ND STREET
31ST STREET
EAST 34TH STREET
8TH AVENUE
BELT LINE
DODDS AVENUE
12TH AVENUE
15TH AVENUE
15TH STREET
36TH STREET
5TH AVENUE
6TH AVENUE
7TH AVENUE
EAST 36TH STREET
EAST 37TH STREET
13TH AVENUE
9TH AVENUE
39TH STREET
40TH STREET
EAST 41ST
SHADOWLAWN

Site No. TN0001087188

Ref. No. 3

TENNESSEE
BLUE BOOK
1991—1994



RILEY C. DARNELL
Secretary of State

UNITED STATES HOUSE OF REPRESENTATIVES

The U.S. House of Representatives is popularly elected every two years. Members must be 25 years old and must have been a citizen for at least seven years. The Constitution of the United States does not provide for the exact number of representatives, rather it leaves the matter up to Congress to determine. It does provide, however, that each state should have representation proportional to its population as part of the nation's population. The apportionment is to be recalculated every 10 years when a nationwide census is conducted to determine population.

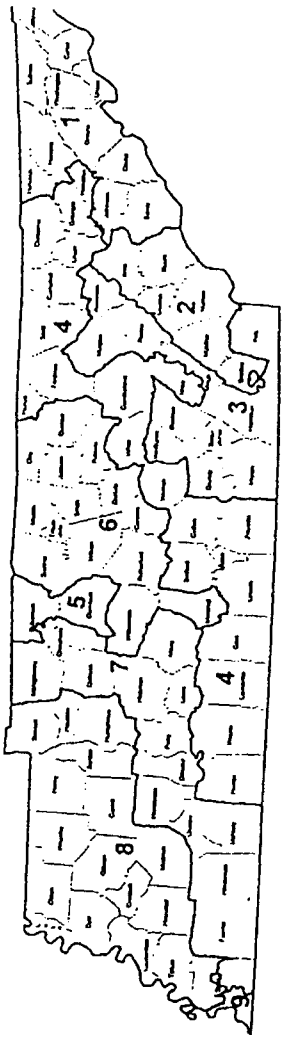
Originally the House had 65 members. As state populations grew in relation to one another and as new states entered the union, Congress added additional seats rather than reduce any existing state delegations. By 1910, the House had grown to 435 members. Numerous attempts were made to increase the size further but the House and Senate could not agree on what action should be taken. In 1929, a law was passed which permanently set the number of representatives at 435 and provided for automatic reapportionment of these seats every 10 years. This process results in some states gaining seats and others losing seats depending on shifts in the population. In the 1971 reapportionment, Tennessee went from nine seats to eight. In 1981, the population proportions had shifted in the opposite direction, resulting in the return of a nine-member House delegation. The 1990 census population proportions again returned nine representatives from Tennessee to Congress. The drawing of districts within the state's boundaries is the responsibility of the General Assembly.

Unlike the Senate, the House of Representatives conducts its business through a complex system of rules and procedures. Debate is limited and the action taken in committees is much more difficult to modify through floor action. For the most part these differences are a result of the larger number of members, making organization a prerequisite to accomplishment. Action is much faster and party discipline has traditionally been more influential in shaping the nature of legislation.

The framers of the Constitution envisioned the House of Representatives as being more closely representative of the will and mood of the country. For this reason the Constitution provides that bills to create taxes must originate in the House. This was designed to protect the electorate from over-taxation or "unfair" taxes similar to those experienced under British rule.

The election of 1990 maintained a Democratic majority of members in the House of Representatives. The chief presiding officer, known as the speaker of the House, is elected from the majority party. While historically the speaker of the House wielded unrivaled power in the affairs of the House, a series of reforms in the 20th century has limited the speaker's power somewhat. However, the speaker still exerts considerable control in House conduct.

U.S. Congressional Districts*



1st – Carter, Cocke, Greene, Hancock, Hawkins, Jefferson, Johnson, Knox in part, Sevier, Sullivan, Unicoi, Washington

2nd – Blount, Bradley in part, Knox in part, Loudon, McMinn, Monroe

3rd – Anderson, Bledsoe, Bradley in part, Grundy, Hamilton, Marion, Meigs, Morgan, Polk, Rhea, Sequatchie, Van Buren

4th – Bedford, Campbell, Claiborne, Coffee, Cumberland, Fentress, Franklin, Giles, Grainger, Hamblen, Hardin, Knox in part, Lawrence, Lincoln, Moore, Pickett, Rhea, Scott, Union, Warren, Wayne, White

5th – Davidson in part, Robertson in part

6th – Cannon, Clay, Davidson in part, DeKalb, Jackson, Macon, Marshall, Overton, Putnam, Rutherford, Smith, Sumner, Trousdale, Williamson, Wilson

7th – Cheatham, Chester, Decatur, Dickson, Fayette, Hardeman, Henderson, Hickman, Lewis, McNairy, Maury, Montgomery, Perry, Robertson in part, Shelby in part

8th – Benton, Carroll, Crockett, Dyer, Gibson, Haywood, Henry, Houston, Humphreys, Lake, Lauderdale, Madison, Obion, Shelby in part, Stewart, Tipton, Weakley

9th – Shelby in part

*Map shows approximate area served. Narrative describes counties in each district.

Site No. TN0001087188

Ref. No. 4

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, Secretary

WEATHER BUREAU
F. W. Reichelderfer, Chief

TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

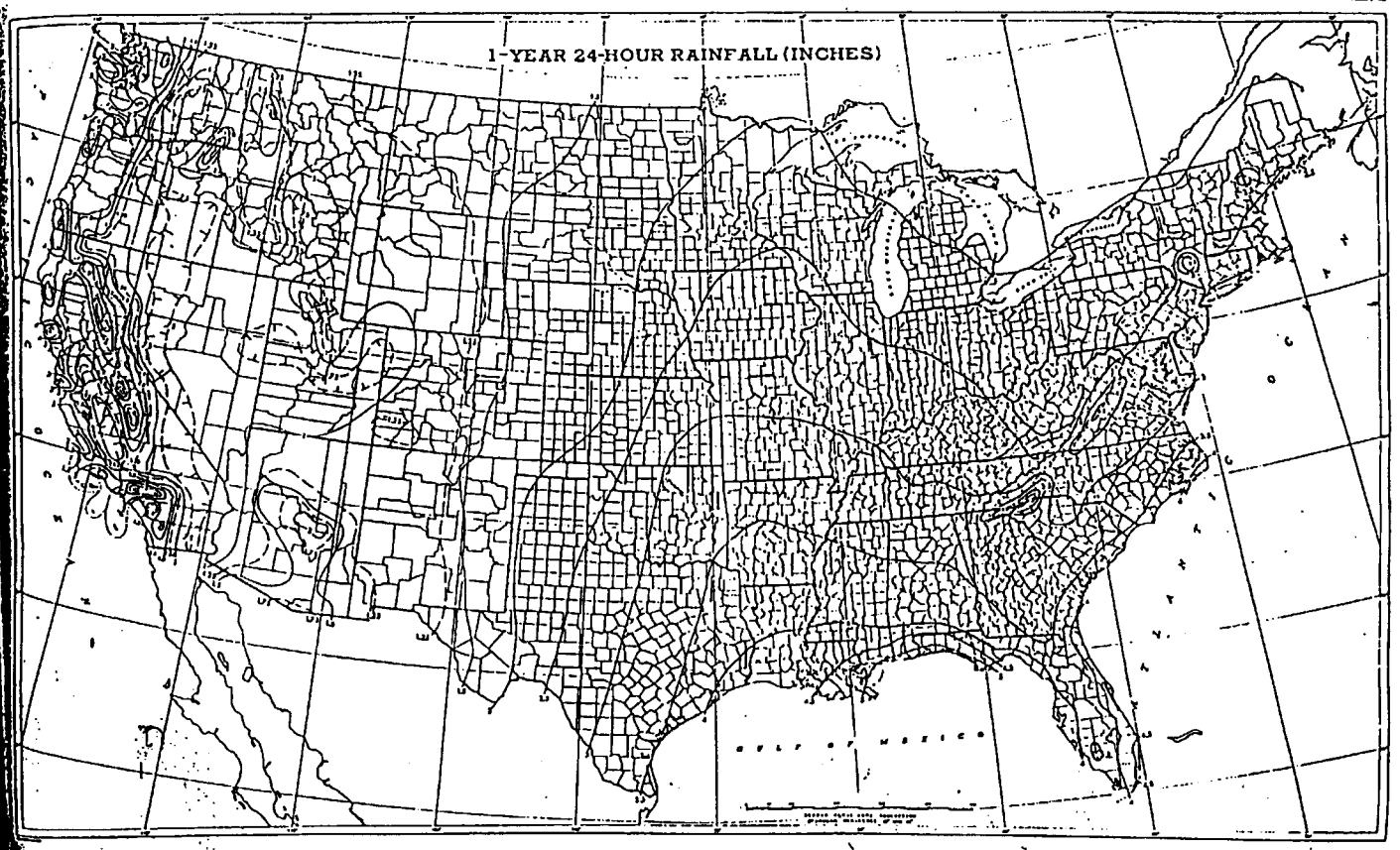
for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years

Prepared by
DAVID M. HERSHFIELD
Cooperative Studies Section, Hydrologic Services Division
for
Engineering Division, Soil Conservation Service
U.S. Department of Agriculture

WASHINGTON, D.C.
May 1961
Repaginated and Reprinted January 1963

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

(161)783-3238 — still valid — 3/8/90


1-YEAR 24-HOUR RAINFALL (INCHES)

TENNESSEE

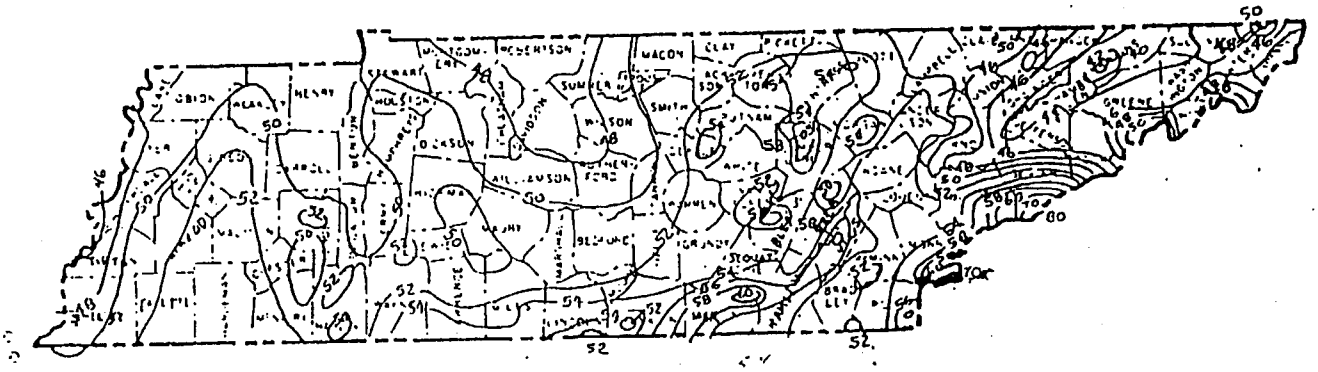


FIGURE 5
AVERAGE ANNUAL PRECIPITATION, IN INCHES

Site No. TN0001087188

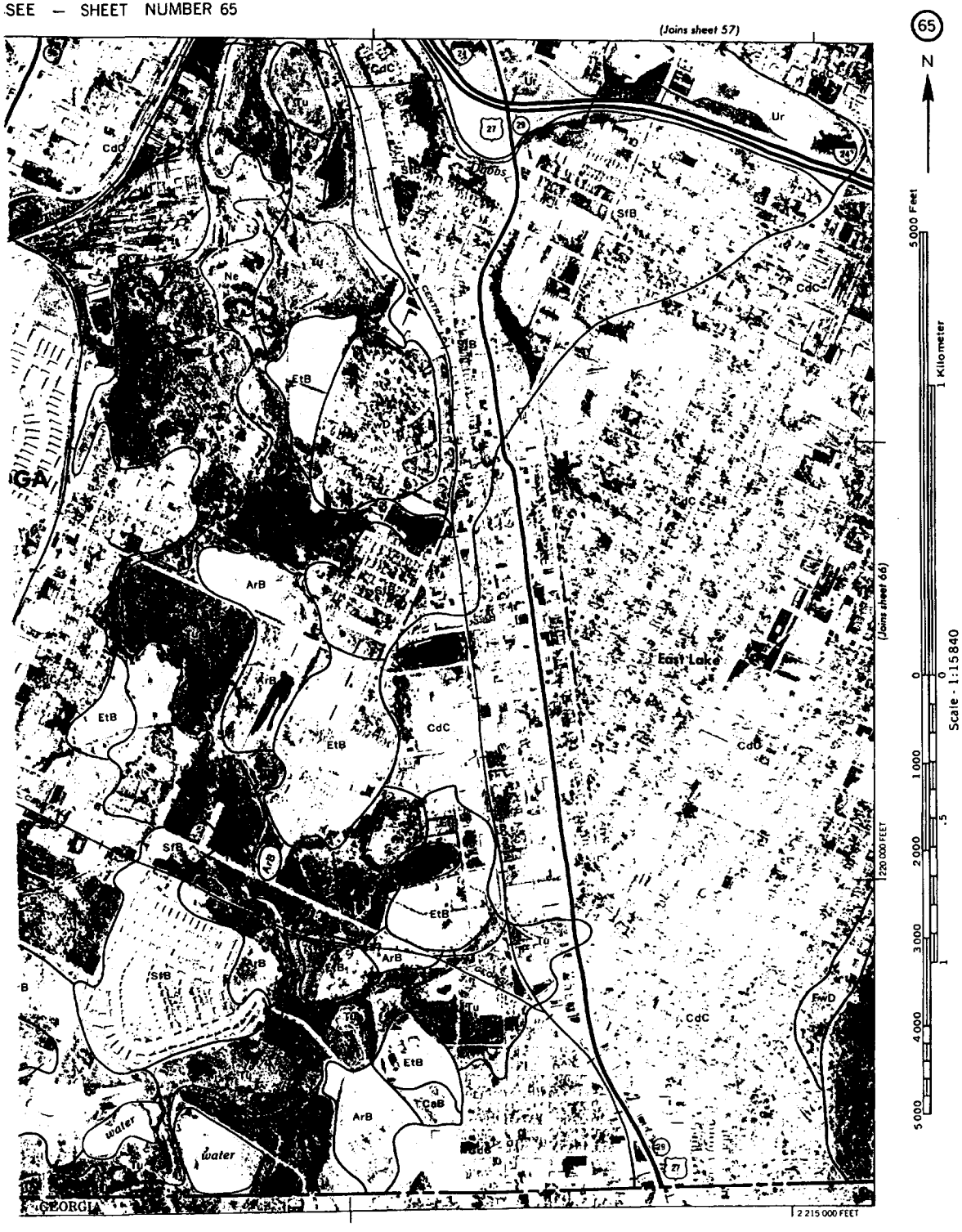
Ref. No. 5

DSF

soil survey of
Hamilton County, Tennessee

United States Department of Agriculture
Soil Conservation Service
in cooperation with
Tennessee Agricultural Experiment Station

SEE — SHEET NUMBER 65



This soil is used mostly for woodland, hay, and pasture. Some areas are used for urban housing and local commercial districts.

This soil is moderately suited to agricultural use. The very slowly permeable clay subsoil retards root growth and the movement of water and air through the soil. Row crops such as corn and soybeans grow poorly on this soil. Pasture plants, such as common bermudagrass, tall fescue, and serecia lespedeza, grow fairly well.

This soil is moderately suited to use as woodland because of moderate available water capacity and the very slowly permeable clay subsoil. Trees that grow on this soil include loblolly pine and shortleaf pine. The clayey subsoil near the surface causes seedling mortality and limits the use of equipment when the soil is wet.

This soil is poorly suited to most urban uses. The very slow permeability, low strength, and high shrink-swell potential are limitations which are difficult to overcome. Engineering works and highway and street construction are limited by the low strength, high shrink-swell potential, and depth to bedrock of this soil.

This soil is in capability subclass IVe and woodland subclass 4c.

CcD—Colbert-Rock outcrop complex, 5 to 20 ercent slopes. This map unit consists of small areas of oping and moderately steep Colbert soils and limestone Rock outcrop so intermingled that they could not be separated at the scale selected for mapping. Areas of this map unit range from about 3 to 25 acres in size, and individual areas of each component range from 0.1 acre to about 2 acres. Areas of Colbert soils make up from 35 to 70 percent of the map unit and average about 45 percent. Areas of Rock outcrop make up from 30 to 55 percent of the map unit and average about 40 percent.

Colbert soils are deep and moderately well drained. Typically, the surface layer is brown silt loam about 4 inches thick. The subsoil is yellowish brown plastic clay that extends to a depth of 45 inches. It is mottled in shades of brown and gray except in the upper 10 to 15 inches. The underlying material is olive clay which has gray and brown mottles. Limestone bedrock is at a depth of 55 inches.

Colbert soils are low in natural fertility and organic matter content. They range from slightly acid to strongly acid, except in the layers just above bedrock, which range from slightly acid to mildly alkaline. Permeability is very slow, retarding root growth and the movement of water and air through the soil. The available water capacity is only moderate because of the high clay content in the subsoil. The shrink-swell potential is high.

Rock outcrop is limestone bedrock that is exposed on land surface. In places, the rocks are level with the surface, and in other places, the rocks extend 2 to 3 feet above the surface.

Included with this unit in mapping are numerous small areas of a soil which is less than 40 inches deep to bedrock. Also included are a few areas of a soil that is less clayey in the upper part of the subsoil. Included soils make up 10 to 15 percent of the unit.

The soils are used mostly as woodland; in a few areas they are used for unimproved pasture.

These soils are poorly suited to farming, woodland, and most engineering uses. The large number of Rock outcrops is the most limiting feature. Other limiting features are very slow permeability, and the high shrink-swell potential. Some tree species that grow on these soils are hickory, chestnut oak, and eastern redcedar.

This complex is in capability subclass VIIs. The Colbert soils are in woodland subclass 4c.

CdC—Colbert-Urban land complex, 2 to 12 percent slopes. This map unit consists of deep, moderately well drained, gently sloping and sloping Colbert soils, Urban land, and disturbed areas that have been altered during construction. The areas of soils and Urban land are so intricately mixed or so small that they could not be separated at the scale selected for mapping. Areas of this map unit range from about 5 to 150 acres in size, and individual areas of each component range from 0.1 acre to about 5 acres. Colbert soils make up 25 to 45 percent of each mapped area, Urban land 25 to 45 percent, and disturbed areas 10 to 25 percent.

Typically, Colbert soils have a surface layer of brown silt loam 4 inches thick. The subsoil is yellowish brown clay that extends to a depth of 45 inches. It is mottled in shades of brown and gray, except in the upper 10 to 15 inches. The underlying material is olive clay and has gray and brown mottles. Limestone bedrock is at 55 inches.

Colbert soils are low in natural fertility and organic matter content. They are slightly acid to strongly acid, except in the layers just above bedrock, which range to mildly alkaline. Permeability is very slow, and the available water capacity is moderate. The shrink-swell potential is high.

The Urban land part of this unit is covered by buildings, streets, parking lots, sidewalks, and other structures.

The disturbed areas have been excavated during the installation of utilities, and cut and filled during grading and shaping operations. They have been altered to the extent that individual soils cannot be identified and predictions cannot be made about their suitability for use without an onsite investigation.

Included in mapping are small areas of a soil that is less clayey in the upper part of the subsoil and areas of a somewhat poorly drained soil that has gray mottles within 10 inches of the surface layer. The somewhat poorly drained soil is on level areas and slight depressions. Also included are some areas of a Talbott soil that has limestone bedrock within 40 inches of the surface.

Chattanooga City Directories

98 Dodd & E 33
3321 Cherokee Warehouses
3321 Firebrick Eng

90 Cherokee War. 3321

85 3321 Waterbed Warehouse & Prof. Ind. Tire

80 3321 Cher War
75 3321 Chris Craft
76 ↓ ↓
77 ↓ ↓
78 Che 3321 Cher War
65 3321 Chris Craft
55 ↓ ↓
50 ↓ ↓
49 NL

www.epa.gov/enviro/index_java.html
2nd button (query form)
enviro-tech query multisystem

Site No. TN0001087188

Ref. No. 6

Times 6-17-1900
Richmond Spinning Mill
in full operation - makes
Fine Yarn for Hosiery,,
Uses "Mule Spinners"
Employes 125

No listing in City Directory
after 1937

PB
1-21-99

Times
Newspaper 5-19-47
1st Boat built 23 wooden cra
Began plant operations April
Employed 200 Site was for
Richmond Spinning Mills

Times 6 16 60
Plant expands coo wo

" the company recently aquire
a 300 x 400 foot site west of
Dodds Ave. & south of 34th S

Times 1-22-67
Expansion program to increase
production of fiberglass hulls
200 to 300 %

Times ~~3-29-72~~ 10-24-75
Plant closing

PB 1-21-99

Site No. TN0001087188

Ref. No. 7

Site No. TN0001087188

Ref. No. 8

Site No. TN0001087188

Ref. No. 9

MAP 168B GROUP K PARCEL 012

DISTRICT: 1

OWNER NAME
CHEROKEE WAREHOUSES INC ETAL

PROPERTY TYPE: 08

LAND USE CODE: 630.00

ADDRESS
00000 P O BOX 1607

LAND VALUE: 261,400

BLDG VALUE: 686,200

CHATT TN 37401

PROP. ADDR. 03321 DODDS AVE

APPRAISAL: 947,600

SALES DATA:

DATE	CONSIDERATION	BOOK	PAGE
05-15-92		3988	0534
02-04-92		3941	0270
12-13-90		3804	0419
12-10-90		3798	0908

---LOT SIZE---

ASSESSMENT: 379,040

EXEMPT CODE:

IMPROVEMENT CODE: 0000

LEGAL DESCRIPTION: SUBDIVISION: EAST LAKE MISSION RIDGE LD CO
*PARCELS COMBINED FOR 1997
LTS 93-108 BLK 13 & LTS 109-12
BLK 14 EAST LAKE MISSION RIDGE
CO PB 2 PG 25

PF4 = NAME BROWSE PF5 = ADDRESS BROWSE
PF7 = BLDG BROWSE PF8 = LAND BROWSE ENTER = KEY NEXT STATE GRID

Ninety (90), Ninety-one (91), and Ninety-two (92), in Block 14, East Lake, Mission Ridge Land Company's Addition, as shown by plat of record in Plat Book 2, page 25, of the Register's Office of Hamilton County, Tennessee.

TRACT NO. FIVE (5): Lots Nos. Fifty-nine (59), Sixty (60), Sixty-one (61), Sixty-two (62), Sixty-three (63), Sixty-four (64), and Sixty-five (65), and all of Lot No. Sixty-six (66), except the North 100 feet thereof, in Block 6, East Lake, Mission Ridge Land Company's Addition, as shown by plat recorded in Plat Book 2, page 25, in the Register's Office of Hamilton County, Tennessee.

REFERENCE is made for prior title to Book 1665, page 605, in the Register's Office of Hamilton County, Tennessee.

TRACT NO. SIX (6): Being the South twenty-five (25) feet of the East 115 feet of that part of East 33rd Street, abandoned by Ordinance No. 4709, City of Chattanooga, Tennessee, that lies between the Western line of Dodds Avenue and the Eastern line of 10th Avenue, as shown on Plat of East Lake, Mission Ridge Land Company's Addition, of record in Plat Book 2, page 25, in the Register's Office of Hamilton County, Tennessee. According to said plat, said part of closed 33rd Street fronts 25 feet on the Western line of Dodds Avenue, and extends Westwardly, between parallel lines, and along the Southernline of East 33rd Street, a distance of 115 feet.

TRACT NO. SEVEN (7): Being the South twenty-five (25) feet of the East one hundred fifteen (115) feet of Lot One Hundred Eleven (111), Block Fourteen (14), Mission Ridge Land Company's Addition, East Lake, as shown by plat of record in Plat Book 2, page 25, in the Register's Office of Hamilton County, Tennessee.According to said plat, said part of lot fronts 25 feet on the Western line of Dodds Avenue, and extends Westwardly, between parallel lines,and along the Southern line of said Lot 111, 115 feet to an alley.

TRACT NO. EIGHT (8): BEING the South twenty-five (25) feet of the East one hundred fifteen (115) feet of Lot One Hundred Fifteen (115), Block Fourteen (14), Mission Ridge Land Company's East Lake, as shown by plat of record in Plat Book 2, page 25, in the Register's Office of Hamilton County, Tennessee. According to said plat, said part of lot fronts 25 feet on the Western line of Dodds Avenue and extends Westwardly, between parallel lines, and along the Southern line of said Lot 115, 115 feet to an alley.

TRACT NO. NINE (9): BEING the South twenty-five (25) feet of the East One Hundred Fifteen (115) feet of Lot One Hundred Thirteen (113), Block Fourteen (14), Mission Ridge Land Company's East Lake, as shown by plat of record in Plat Book 2, page 25, in the Register's Office of Hamilton County, Tennessee. According to said plat, said part of lot fronts 25 feet on the Western line of Dodds Avenue and extends Westwardly, between parallel lines, and along the Southern line of said Lot 113, a distance of 115 feet to an alley.

TRACT NO. TEN (10): Being the North twenty-five (25) feet of the East 115 feet of Lot One Hundred Sixteen (116), Block Fourteen (14), Mission Ridge Land Company's East Lake, as shown by plat of record in Plat Book 2, page 25, in the Register's Office of Hamilton County, Tennessee. According to said plat, said part of lots fronts 25 feet on the Western line of Dodds Avenue and extends Westwardly, between parallel lines, and along the Northern line of said Lot 116, 115 feet to an alley.

TRACT NO. ELEVEN (11): Being the North twenty-five (25) feet of the East One Hundred Fifteen (115) feet of Lot One Hundred Thirteen (113), Block Fourteen (14), Mission Ridge Land Company's East Lake, as shown by plat of record in Plat Book 2, page 25, of the Register's Office of Hamilton County, Tennessee. According to said plat said part of lot fronts 25 feet on the Western line of Dodds Avenue and extends Westwardly, between parallel lines and along the Northern line of Lot 113, 115 feet to an alley.

TRACT NO. TWELVE (12): Being the South twenty-five (25) feet of the East One Hundred Fifteen (115) feet of Lot One Hundred Sixteen (116), Block Fourteen (14), Mission Ridge Land Company's East Lake, as shown by plat of record in Plat Book 2, page 25, of the Register's Office of Hamilton County, Tennessee. According to said plat, said part of lot fronts 25 feet on the Western line of Dodds Avenue, and extends Westwardly, between parallel lines, along the Southern line of said Lot No. 116, a distance of 115 feet to an alley.
TRACT NO. THIRTEEN (13): The North twenty-five (25) feet of the East One Hundred Fifteen (115) feet of Lot One Hundred Fourteen (114), Block Fourteen (14), Mission Ridge Land Company's Addition, as shown by plat recorded in Plat Book 2, page 25, of the Register's Office of Hamilton County, Tennessee. According to said plat, said part of lot fronts 25 feet on the West line of Dodds Avenue, and extends back Westwardly, between parallel lines, 115 feet to an alley.
REFERENCE is made for prior title to Book 1767, page 45, as to Tract No. 6, to Book 1995, page 174, as to Tract No. 7, as to Book 1773, page 699, as to Tract No. 8, to Book 1747, page 146, as to Tract No. 9, to Book 1765, page 296, as to Tract No. 10, to Book 1763, page 700, as to Tract No. 11, to Book 1767, page 701, as to Tract No. 12, and to Book 1763, page 702, as to Tract No. 13, all in the Register's Office of Hamilton County, Tennessee.
SUBJECT TO Governmental zoning and subdivision ordinances or regulations in effect thereon.

Taxes for the Year 1977 are assumed by the Grantees herein.

Tract No. 6, herein described, is conveyed subject to life estate reserved unto Mable M. Atwood in Deed recorded in Book 1767, page 15, in the Register's Office of Hamilton County, Tennessee.

Tract No. 7, as herein described, was conveyed subject to life estate retained in favor of Harold W. Kayler, in Deed of Clerk and Master to Chris-Craft Corporation recorded in Book 1995, page 174, in the Register's Office of Hamilton County, Tennessee. Grantor covenants that the said Harold W. Kayler is now deceased, and that the life estate has therefore been terminated.

This conveyance is further made subject to stipulations in various Deeds of record, with reference to certain of the above described tracts, as follows:

(a) As to Tract No. 7, subject to stipulation in Deeds of record conveying Tract No. 7, and a parcel adjacent thereto on the North, that the Northern line thereof is the dividing line of the shed on the rear of the property and the property immediately North of it.

(b) As to Tract No. 8, subject to stipulation in Deed recorded in Deed recorded in Book 961, page 80, that it is understood the Northern line of said property is the dividing line of the shed on the rear of said property and the property immediately North thereof.

(c) As to Tract No. 6, subject to stipulation in Deed recorded in Deed recorded in Book 961, page 83, conveying property adjoining on the North side thereof, stipulating that the Southern line of the property is the dividing line of the shed on the rear and property immediately South of it.

(d) As to Tract No. 7, Deed in Book 1586, page 133, conveying the South 25 feet of the East 115 feet of Lot 111, stipulates the North line thereof is the dividing line of the shed on said property and property immediately North of it.

(e) As to Tract No. 13, stipulation in Deed recorded in Book 1729, page 303 that the South line thereof is the dividing line of a shed between it and property adjoining on the South.

TO HAVE AND TO HOLD the said described Real Estate unto the said CHEROKEE WAREHOUSE, INC., an undivided 50% interest, unto KENCO, INC., an undivided 14% interest, unto LIGHTCO, INC., an undivided 14% interest, unto STAR WAREHOUSE, INC., an undivided 14% interest, and unto PARK WAREHOUSE, INC., an undivided 8% interest, and unto their respective successors or assigns, forever in fee simple.

Grantor covenants that it is lawfully seized and possessed of the said described Real Estate; has good right and lawful authority to sell and convey the same; that the title thereto is clear, free and unencumbered, except as herein set forth; and it will forever warrant and defend the same against all other lawful claims.

IN WITNESS WHEREOF Chris-Craft Industries, Inc., has caused its corporate name to be signed, by its duly authorized Officers, on this the 13 day of May, 1977.

CHRIS-CRAFT INDUSTRIES, INC.

BY: _____

ATTESTED

BY: _____
Assistant Secretary

STATE OF _____)

COUNTY OF _____)

On this the 13 day of May, 1977, before me personally appeared _____ and _____, with whom I am personally acquainted, and who upon oath acknowledged themselves to be the _____ and _____, respectively, of Chris-Craft Industries, Inc., the within named bargainor, and that they as such Officers, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the said corporation, by themselves as such Officers thereof.

IN WITNESS WHEREOF I have hereunto set my hand and Notarial Seal.

_____
NOTARY PUBLIC

My commission expires:

8-15-77

STATE OF TENNESSEE)
COUNTY OF HAMILTON)

I hereby swear or affirm that the actual consideration for this transfer or value of the property transferred, whichever is greater, is $420,000.00, which amount is equal to or greater than the amount which the property transferred would command at a fair and voluntary sale.

_____
AFFIANT - GRANTEE

5372

Subscribed and sworn to before me, on this the 13 day of May, 1977.

_____
NOTARY PUBLIC

IDENTIFICATION REFERENCE

My commission expires:

8-15-77 May 13, 1977 CONV 420,000.00

MAY 13 4 08 PM '77

MAY13 WDEED A* 8.00
MAY13 STAX A* 1,092.00
MAY13 FEE -4- A* .50

DOROTHY P. BRANNER
REGISTER
HAMILTON COUNTY
STATE OF TENNESSEE

[redacted] Times 10/8/98 Thurs

Pit full of paint found at school

Cleanup delays construction

By Judy Walton
The Chattanooga Times

A pit full of old — very old — paint has slowed work on the new Eastlake Elementary School.

Workers at the school site on Dodds Avenue recently uncovered a 30- by 60-foot pit filled with wooden barrels containing lead-based paint.

Gary Waters, facilities director of the Hamilton County Schools, said nobody knows how the barrels got there or when. But such a discovery isn't unexpected on a brownfields site like this one.

The schools will look back through property records to identify former owners. If liability can be established, the guilty party could be charged for the cleanup.

Waters hesitated to estimate a cost, but said, "It would be safe to say it would be in the six figures."

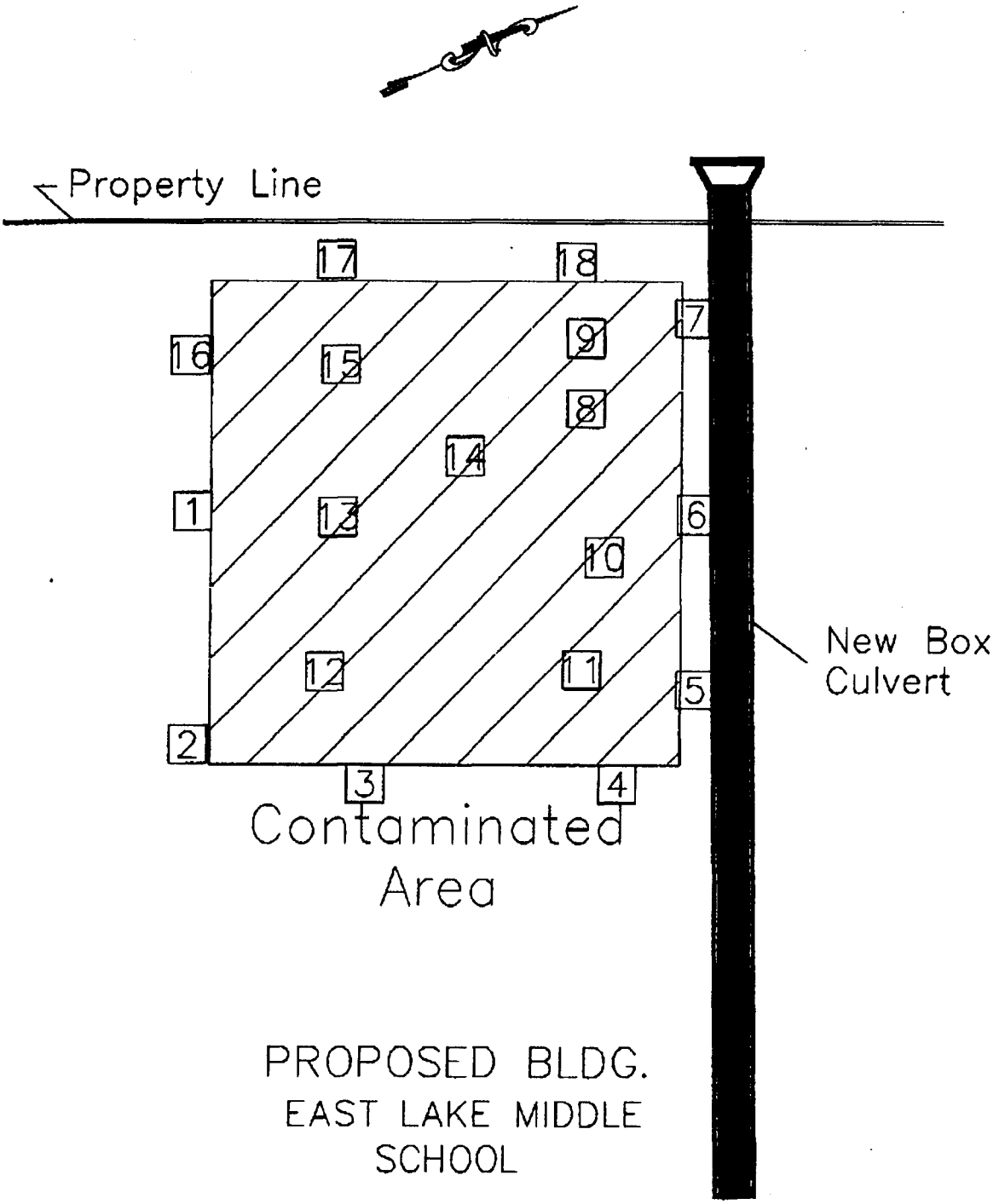
The work will have to be done by a special contractor under a permit from the state Department of Environment and Conservation. Waters said bids will be solicited next week, and he expects the Hamilton County Commission to pick a contractor at the Nov. 4 meeting.

When the paint was found, work stopped so the substance could be tested. The contractor will have to determine the extent of the contamination.

Tests showed the paint has not contaminated groundwater, Waters said. There won't be any harm to the neighborhood or the children who will go to school there, he said.

"It's no more of a danger today than it has been for the last 30 or 40 years, however long it's been there."

He estimated the cleanup will take two to three weeks once a contractor is picked. It will delay school construction, but some delay is built into the schedule, Waters said.



6 Location of Confirmation Samples

	CAD FILE:	DRAWN BY:	CHECKED BY:	VERT. SCALE:	HORZ. SCALE:	REPORT No.:	JOB No.:	Figure No.:
12-15-98	1412a-2.dwg	rmg		N/A	N/A	1412-A	1412A	2

AT&E Ground Engineering
& Testing Service

CONTAMINATED AREA DETAIL
EAST LAKE MIDDLE SCHOOL
CHATTANOOGA, TN

East Lake Middle School

Soil Removal Analytical Results

SOIL GRAB SAMPLES					
Test Number	Sample Date	Analysis	Location	Result	Units
1	11/11/98	Total Lead	Stein Stockpile	218.00	mg/kg
2	11/11/98	Total Lead	Stein Stockpile	76.10	mg/kg
3	11/18/98	Total Lead	Excavated Material	422.00	mg/kg
4	11/18/98	Total Lead	Excavated Material	1500.00	mg/kg
5	11/18/98	Total Lead	Excavated Material	576.00	mg/kg
6	11/18/98	Total Lead	Excavated Material	1760.00	mg/kg
7	11/18/98	Total Lead	Excavated Material	913.00	mg/kg
8	11/18/98	TCLP Lead	Stein Stockpile	0.50	mg/l
9	11/20/98	TCLP Lead	Stockpile A	0.50	mg/l
10	11/20/98	TCLP Lead	Stockpile B	2.36	mg/l
11	11/20/98	TCLP Lead	Stockpile C	1.20	mg/l
12	11/20/98	TCLP Lead	Excavated Material	44.80	mg/l
13	11/20/98	TCLP Lead	Excavated Material	53.50	mg/l
14	11/20/98	TCLP Lead	Excavated Material	12.70	mg/l
15	11/20/98	TCLP Lead	Excavated Material	1.03	mg/l
16	11/20/98	TCLP Lead	Excavated Material	12.60	mg/l
17	11/23/98	TCLP Lead	Stockpile D	81.80	mg/l
18	11/23/98	TCLP Lead	Stockpile E	112.00	mg/l

Table 6

Analytical Results from Excavated Material

Site No. TN0001087188

Ref. No. 11

State of Tennessee

DEPARTMENT OF CONSERVATION

DIVISION OF GEOLOGY

BULLETIN 58

PART I

GROUND-WATER RESOURCES OF EAST TENNESSEE

By

G. D. DeBUCHANANNE

and

R. M. RICHARDSON

Prepared in cooperation with the U.S. Geological Survey

NASHVILLE, TENNESSEE

1956

Jonesboro limestone.—The Jonesboro limestone is about 2,000 feet thick and represents the limestone phase of the Ordovician part of the Knox group. Less work has been done in subdividing the Knox group in the southeast limestone phase than in the northwest dolomite phase. The Jonesboro limestone is a pure, massive dark-blue-weathering limestone containing thin layers of silty dolomite. Sandstone beds occur in the lower 400 feet. Thin sandstone layers also occur in the lower part of the upper third of this formation. Chert is rare, even in the residuum. The limestone weathers to a deep residual clay which forms red- to orange-colored soil. Where sandstone beds were present, weathered blocks of sandstone are found in the soil.

Ground water occurs in fractures in this formation. Of 13 springs scheduled, all had yields estimated in excess of 10 gpm, but only 4 had yields estimated in excess of 100 gpm. Most of the wells drilled in this formation furnish domestic supplies. Under favorable conditions, industrial or municipal supplies may be obtained.

Two water samples were collected from this formation. The hardness was high in both (183 and 212 ppm), but other chemical characteristics were not objectionable.

Ordovician System

Middle Ordovician Series

Lower and middle parts of Chickamauga limestone

The lower and middle parts of the Chickamauga limestone have been divided into several units in some locations. In others, they have been mapped as one unit.

These rocks consist of blue-weathering limestone, which is generally fine grained, fairly light colored, and slightly silty and which contains scattered, though locally abundant, fossils. About 100 feet below the upper part of the Chickamauga limestone are two persistent beds of altered volcanic ash a foot or more thick. Greenish chert, 1 or 2 inches thick, underlies each of the ash beds. The lower and middle parts of the Chickamauga limestone produce a rather thin rich soil through which appear pinnacles of limestone.

Ground water in these rocks is restricted to fractures that have been enlarged by solution. The presence of silty layers and shaly partings frequently provides impervious layers through which water will not percolate. Where such partings occur within the more massive limestones, bedding-plane solution cavities commonly develop. The fracturing of the limestone by folding and faulting has resulted in a more or less interconnected system of cavities. Many small springs develop

at shale-limestone contacts. Where bedding-plane solution cavities or fractures extend to the surface at topographic lows, large springs are found. The success of wells drilled into these rocks depends on the number and size of cavities encountered. Most wells yield at least a domestic supply of water. Several small industries obtain their water supply from these rocks, though it is usually necessary to drill at least two wells to obtain 100 gpm. The lower and middle parts of the Chickamauga limestone are a better aquifer than the upper part.

Water from these rocks usually has a hardness of more than 200 ppm.

Units 1, 2, and 3 of Chickamauga limestone

In places, the lower and middle parts of the Chickamauga limestone have been divided into three units to which formational names have not been assigned. In general, these units can be separated by means of fossil horizons or other geologic guides. The rocks consist of shale and limestone interbedded with silty nodular limestone. The soil produced by weathering is usually a thin yellow moderately rich soil containing many shale chips.

Water in these rocks is restricted to fractures and bedding-plane openings. Small springs are common, and several yielding more than 450 gpm were scheduled. The springs usually issue from or near shale-limestone contacts, indicating that bedding-plane solution cavities are well developed. Wells in these rocks usually have low yields when located on hills or other topographic highs. Wells of larger yield are usually located near permanent streams.

The quality of the water is generally good.

Lenoir limestone and Athens shale

The Lenoir limestone and Athens shale are of the same age. The two units grade into each other south of Knoxville.

The Lenoir limestone, which varies in character, consists of dark bluish argillaceous nodular limestone about 500 feet thick. Locally the lowest beds consist of a pure limestone called the Mosheim member but in other places the lowest beds of the Lenoir are silty. This formation in its pure limestone phase weathers to a moderately rich silty clay soil that is frequently removed by erosion, exposing the underlying rock. The soil from the shaly phase is shallow and poor, with many limestone outcrops.

As in other limestones, ground water occurs in fractures. Of eight springs scheduled from this formation, three were estimated to flow more than 450 gpm. Many domestic water supplies are obtained from wells in this formation.

Analyses of eight water samples indicate that water from this formation has a hardness of less than 200 ppm. Concentration of iron

Site No. TN0001087188

Ref. No. 12

DEPARTMENT OF CONSERVATION

DIVISION OF GEOLOGY

William D. Hardeman, *State Geologist*

GEOLOGIC MAP AND MINERAL RESOURCES SUMMARY OF THE CHATTANOOGA QUADRANGLE, TENNESSEE

(Including the Tennessee Portion of the Fort Oglethorpe Quadrangle, Georgia-Tennessee)

QUADRANGLE LOCATION

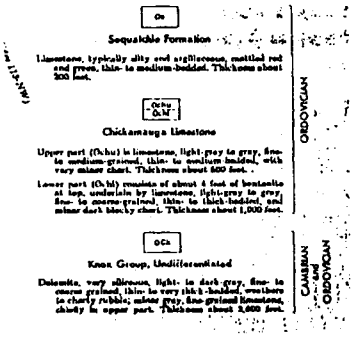
GEOLOGIC MAP
By
C. Pratt Finlayson, Robert H. Barnes,
John M. Colvin, Jr., and Edward T. Luther

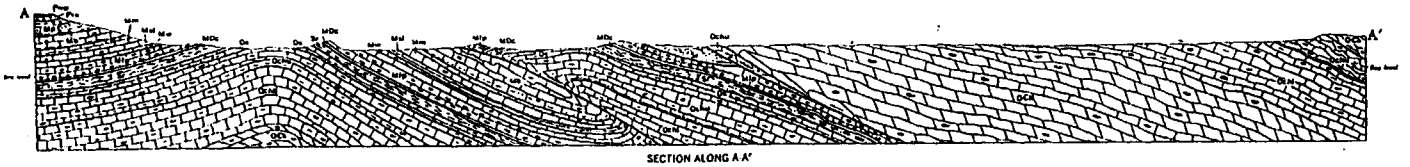
MINERAL RESOURCES SUMMARY
By
C. Pratt Finlayson

NASHVILLE, TENNESSEE

1964

st Chattanooga 112-SW)





SECTION ALONG A-A'

No vertical exaggeration

SECTION ALONG B-B'

No vertical exaggeration

GEOLOGIC MAP OF THE CHATTANOOGA QUADRANGLE, TENNESSEE

Including the Tennessee portion of the Fort Oglethorpe Quadrangle, Georgia-Tennessee

Site No. TN0001087188

Ref. No. 13

TESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

GE CORRESPONDENCE

FROM	TO	DA
SIU	Hamilton Co. File	

25 November 1986

SIU Files

G.S. Caruthers

ECT: Details of Telecon - pertinent site information.

On 25 November 86 at 0945 a.m., G.S. Caruthers of Tenn. Superfund Division contacted Bob Burrell of Tenn. - American Water Co. by telephone regarding well use in the Chattanooga urban area.

Details of conversation:

Mr. Burrell is in charge of the cross-connection monitoring program for TAWC. He did not know of any households which were using well water for domestic purposes. There are numerous private wells in the Chattanooga urban area, according to Mr. Burrell, but they are used only for watering gardens, washing cars, etc. or are commercial or industrial process water wells. TAWC's cross-connection program actively discourages household use of well water by prohibiting inter-connections between private and public water supply systems, Mr. Burrell said.

GSC/ib

DATE

Site No. TN0001087188

Ref. No. 14

PUBLIC WATER [redacted]

0000107

Name of Water System: TENNESSEE - AMERICAN WATER COMPANY

Address: 701 BROAD ST. P.O. BOX 6338 County: HAMILTON

CHATTANOOGA 37402 37401 Office Phone 755-7600 Plant Phone 755-7654

Title of Person	Name	Certification	Interviewed	Correspondence
VICE PRESIDENT	RICHARD SULLIVAN			X
OPERATIONS Mgr	BILL HOBBS		X	CC
PRODUCTION SUPT.	DAVE SNYDER (#1515) (755-7645)	F4/D3	X	
DISTRIBUTION SUPT.	~~CHARLIE DOWDY~~ (Lowell Bennington		X	
WATER QUALITY SUPT.	SUSAN HOLMES (755-7649 LAB)		X	

Supervisor Charlie Boyd

No.		Source Name	USGS Map 105 NE LATITUDE DEG	MIN	SEC	LONGITUDE DEG	MIN	SEC	River Mile	MARK (ONE ONLY) SURFACE	GROUND	PURCHASED	TREATMENT AERATION	PRECHLORINATION	COAGULATION	SEDIMENTATION	FILTRATION	CORROSION CONTROL	SOFTENING	TASTE AND ODOR CONTROL	IRON REMOVAL	FLUORIDE ADJUSTMENT	DISINFECTION
1	R	TENNESSEE RIVER	35	03	12	85	17	21		X				X	X	X	X	X		X		X	X
	A																						
2	R																						
	A																						
3	R																						
	A																						
	R																						
	A																						

Name of Systems served by this System	Other Systems Connected to this System
EASTSIDE U.D.	WALKER CO. U.D. (GEORGIA)
FT. OGLETHORPE W.S. (GEORGIA)	
CATOOSA U.D. (GEORGIA)	
HIXSON U.D.	
SIGNAL MTN W.S.	

Plant Classification: T-4

Distribution Classification: D-2 Date Laboratory Certified

Design Capacity 50,000 / 72 (gpm) Filter Area (sq. ft.) Filter Rate ≤ 2.0 (gpm/sq. ft.)

Raw Water Pump Capacity 75,000 (gpm) Finished Water Pump Capacity 58,330 gallons per minute

Distribution Storage, Gravity Flow 19.4 (million gallons) Emergency Power Only 3 DIESEL PUMPS (gallons per minute)

Clearwell Capacity 5.38 (million gallons) Date Cross Connection Control Program Approved 5-23-72

Date of Last Inorganic Chemical Analysis 10-30-91 Date of Last Organic Chemical Analysis 5-29-91

Date of Last Radionuclide Analysis 10-31-91 Date Emergency Plan Approved 10-31-89 * Last Rating 99

Number of Wholesale Customers 6 Number of Meters 164,231 Date of Last Survey 5-16-90

Remarks: VOCs ALL OK * REV TO EMER PLAN APPROVED 10-22-90

Date of Survey	Number of Connections	Household Factor	Population Served	Average Daily Pumpage (million gallons)	Maximum Day Pumpage (million gallons)	Engineer	Rating	Year
								1994
								1993
								1992
12-5-91	59767	2.50	149467	34.87	44.47	MTD	98	1991
5-16-90	60602	2.71	164,231	36.52	43.31	MTD	99	1990
								1989

FH-0255 WQC (1)

Site No. TN0001087188

Ref. No. 15

DEPARTMENT OF HEALTH AND ENVIRONMENT

CORRESPONDENCE

FROM	TO	DATE

November 19, 1987

Ferman Miller, Division of Superfund, Chattanooga

Craig Stannard, Division of Ground Water Protection, Chattanooga

Information Concerning Wells in the Chattanooga Area

As per your request, wells in the Chattanooga area, south of the Tennessee River, east of Lookout Mtn., and west of Missionary Ridge are listed and described below:

1. Uniform Rental Services Inc. has one or more wells at its plant on Tennessee Avenue. Specific details are not known.

2. Velsicol Chemical Corporation has several monitoring wells at "Residue hill."

3. Southern Wood Piedmont Company at 400 East 33rd Street has at least sixteen monitoring wells of shallow depth.

4. Chattanooga Glass Company has a well at its plant facility at 401 West 45th Street. According to company officials it was drilled by Bacon Well Drilling Company in 1982 and it is approximately 325 feet deep. The well water, which is used for industrial purposes only, is reportedly of good quality and quantity.

5. Southern Cellulose Products Inc. has two wells located on 38th Street just east of Chattanooga Creek. According to company officials, the two wells were drilled in 1976 by Miller Drilling Company and are approximately 150 feet deep. Only one of the wells is currently in use. The other well is auxilliary. The water withdrawn is used for processing purposes only and the water quality and quantity are reportedly good.

6. Tennessee Truck Parts Company at 400 East Main St. has a well that is reportedly used for industrial purposes only. It is 145 feet deep and was completed in 1979.

7. Will-Wear Hosiery has a well located at or near its 2000 Stuart Street plant location. The well is reportedly 1,301 feet deep and is used for industrial processes only.

8. Chattanooga State College at 4501 Amnicola Highway has a 512 foot deep well that is used to supply water to the campus water fountain.

PH-SR

9. Wheland Foundry at 2800 South Broad Street has a 61 foot deep well that is used for monitoring purposes.

10. Ledco Inc. at 3535 St. Elmo Avenue has a 250 foot deep well that provides water for the company's heat pump.

11. Gateway Hosiery Mills at 1220 East Main Street reportedly has a well that is used to provide processing water for its operations. The well is of unknown depth but is reportedly contaminated with perchloroethylene, benzene and a number of other organic chemicals at the ppm level. The well was reportedly drilled by Miller Drilling Company.

12. Alco Chemical Corporation at 909 Miller Avenue has a 600 foot deep well that provides water for industrial uses at the plant.

13. A well located at 1400 Citico Avenue, belonging to Robert Nabors, is reportedly 343 feet deep and was drilled earlier this year. It is not being used at this time.

14. A well has recently been completed for a car wash that is being built near the intersection of Wilcox Blvd. and Chamberlain Avenue. Its depth is not known but it was reportedly drilled by Miller Drilling Company. [illegible]

The wells are listed 1-14 on the enclosed location map. Well log information concerning some of the wells is also enclosed.

CJS/tdm

Enclosures

cc: Robert Powell, Division of Superfund, Nashville

Site No. TN0001087188

Ref. No. 16

City of Chattanooga

January 6, 1998
9

Tennessee Department of Environment and Conservation
Division of Superfund
Mr. Paul Bradshaw
540 McCallie Avenue
Suite 550
Chattanooga, TN 37402

Re: Eastlake Middle School

Dear Mr. Bradshaw

The drainage from the Eastlake Middle School area flows in a north-westerly direction through a Public Works ditch, then at approximately S. Hickory Street it flows into Dobbs Branch and it finally drains Chattanooga Creek. The length of travel is approximately 1.7 miles.

If you have any questions please contact me at (423) 757-0039.

Sincerely,

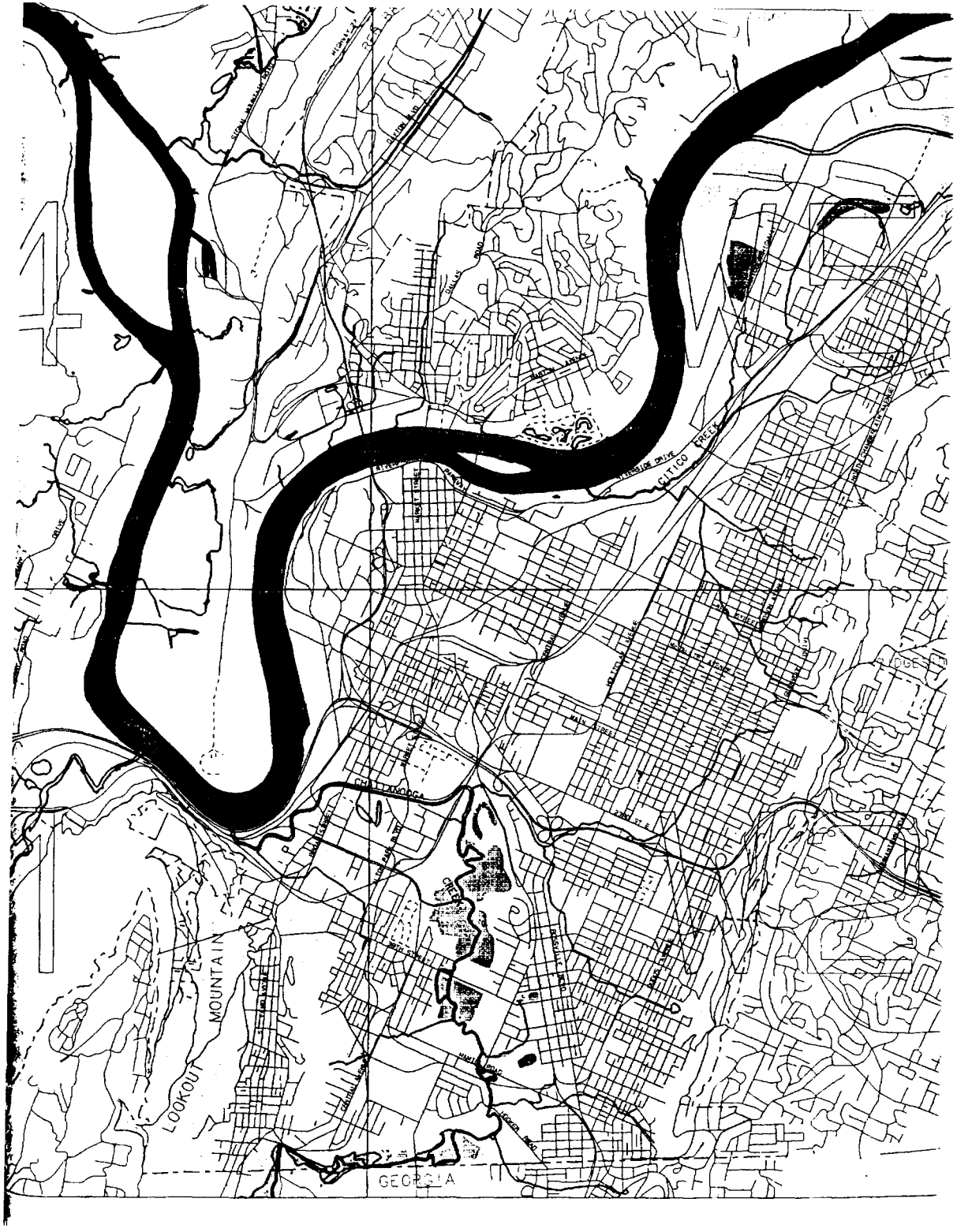
Ileana M. Speer
Storm Water Plans Reviewer

Enclosures

cc: Carol A Putnam

Department of Public Works
Stormwater Management
1001 Lindsay Street 37402 • (423) 757-5120

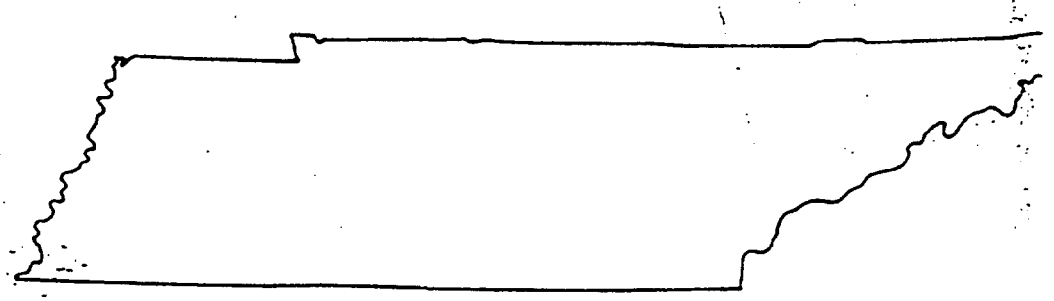

PARK
C1001
C1004
C1006
C1008
C1002
C100201
C100204
C100203
C1501
C10
C11
C12
C14
23
25
MAIN STREET E
VILLO ST
KELLEY ST
FOUST STREET
DOYLE STREET
CRESCENT CIRCLE
31ST STREET E
32ND STREET E
33RD STREET E
35TH STREET E
1ST AVENUE
3RD AVENUE
5TH AVENUE


CHATTANOOGA
LOOKOUT MOUNTAIN
GEORGIA

Site No. TN0001087188

Ref. No. 17

Water Resources Data Tennessee Water Year 1988



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TN-88-1
Prepared in cooperation with the State of Tennessee and with other agencies

03568000 TENNESSEE RIVER AT CHATTANOOGA, TN

LOCATION.--Lat 35°05'12", long 85°16'43", Hamilton County, Hydrologic Unit 06020001, on right bank at Rivermont Golf and Country Club, 0.5 mi downstream from South Chickamauga Creek, 3.0 mi downstream from Chickamauga Dam, 3.5 mi upstream from Walnut Street Bridge in Chattanooga, and at mile 467.6.

DRAINAGE AREA.--21,400 mi², approximately.

PERIOD OF RECORD.--April 1874 to current year. Monthly discharges only for some periods, published in WSP 1306. July 1930 to December 1935, published as "at Hales Bar, near Chattanooga." Gage-height records collected in this vicinity since 1874 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 353: 1874-1912. WSP 783: 1917. WSP 823: 1875(M). WSP 973: 1942. WSP 1306: 1916(M). WSP 1386: 1932-34 (station at Hales Bar near Chattanooga).

GAGE.--Water-stage recorder. Datum of gage is 621.12 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 1, 1939, nonrecording or recording gages at several sites from 7.0 mi upstream from Chattanooga to Hales Bar Dam 33 mi downstream at or within 0.2 ft of present datum, except nonrecording gage at Bridgeport, AL, 49.9 mi downstream at different datum Oct. 22, 1913, to Feb. 28, 1915, and Oct. 1, 1918, to Jan. 5, 1921. Auxiliary gages at several sites parts of periods since Feb. 28, 1915. Present auxiliary gage at site 2.2 mi downstream from base gage at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1936 by many upstream reservoirs (see p. 180 and Water Resources Data for adjoining states). Periodic observations of water temperature are published in this report as miscellaneous water quality data.

AVERAGE DISCHARGE.--114 years, 36,550 ft³/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 410,000 ft³/s, Mar. 1, 1875, gage height, 53.8 ft, present datum, at Walnut Street, from rating curve extended above 250,000 ft³/s; minimum daily, 1,200 ft³/s, Nov. 1, 1953; minimum gage height, 0.0 ft, Sept. 11-14, 1881, Sept. 19, 1883.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 57.9 ft, Mar. 11, 1867, present datum at Walnut Street, discharge about 459,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 74,100 ft³/s, Jan. 21; maximum gage height, 19.72 ft, Jan. 20; minimum daily discharge, 5,740 ft³/s, May 25; minimum gage height, 11.14 ft, Mar. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27700	10200	14100	8010	21500	10600	9520	8210	7360	13100	9020	18700
2	28400	14100	15300	8460	27100	8840	8420	8030	7090	9020	11000	17300
3	19500	11800	16100	7140	24600	7520	8210	7690	7530	8880	9730	13200
4	15200	13400	14600	20200	22800	7660	8340	7520	6940	8570	9560	10300
5	24400	13500	9080	30200	32600	8740	6920	7050	7250	14500	11600	14400
6	25400	21700	7820	33100	27200	7800	6430	6760	8430	15400	9910	15500
7	28900	21100	12100	26600	27200	18000	7480	8060	8380	15300	8410	18700
8	31200	10500	9570	26000	30200	13700	6600	8300	9960	14100	10800	15100
9	27400	14600	9500	13300	27700	9970	6660	9210	9650	8400	14100	15500
10	18300	14800	8610	12900	27700	9790	7440	9450	9630	9080	20400	14000
11	15000	17900	9350	26400	25900	16900	6670	8020	10400	11800	21400	13000
12	23600	23400	9870	25600	32500	16900	8520	8920	10700	11000	23000	14100
13	29900	16400	10300	19700	25700	15000	7650	8240	10600	11700	10700	18500
14	30700	17700	9150	28200	18400	28200	11500	8090	18400	11600	12100	22500
15	28700	10800	9050	25600	19500	35600	9280	8210	15500	17800	22200	19000
16	24100	16200	12600	13600	22200	38700	8740	8890	9130	17000	12600	18600
17	15200	16000	18800	19000	20200	36000	10600	7170	9050	11500	15100	11300
18	6460	19800	22600	20400	19000	21400	10500	7750	9360	8980	12700	11200
19	19100	20600	16200	33900	32900	10500	8460	8420	9460	7450	13700	14900
20	17900	28200	8210	58700	13200	10700	9140	8840	15100	9350	13000	26200
21	19700	24500	11700	72200	15100	10900	8890	7850	15300	9910	9000	14000
22	29700	14200	11800	56500	20000	9920	9620	7680	16900	9220	13400	15500
23	32400	24200	11100	43300	18200	10400	10300	7250	18400	10400	13800	17300
24	9110	21500	10200	42500	25600	10500	6190	7280	19500	11000	14000	9670
25	7190	17500	11500	37200	29300	10200	8350	5740	14300	11300	11100	8060
26	13100	8600	22100	26800	25600	9100	7640	6210	7460	10200	10700	10500
27	13600	8600	11300	31300	16600	10600	9390	7360	12200	9140	10900	11700
28	14400	8740	21900	24400	9790	11500	7790	7590	11800	9380	7020	11100
29	14700	9210	27200	16000	14200	11600	8140	7680	12200	13800	8340	11300
30	14100	20500	23900	13000	---	10300	8110	7060	11200	9130	11200	12800
31	9520	---	17900	9460	---	8110	---	7420	---	10100	14600	---
TOTAL	634580	490250	423510	829670	672490	445650	251500	241950	339180	348110	395090	443930
MEAN	20470	16340	13660	26760	23190	14380	8383	7805	11310	11230	12740	14800
MAX	32400	28200	27200	72200	32900	38700	11500	9450	19500	17800	23000	26200
MIN	6460	8600	7820	7140	9790	7520	6190	5740	6940	7450	7020	8060

CAL YR 1987 TOTAL 9345490 MEAN 25600 MAX 103000 MIN 5690
WTR YR 1988 TOTAL 5515910 MEAN 15070 MAX 72200 MIN 5740

Site No. TN0001087188

Ref. No. 18

TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

OFFICE CORRESPONDENCE

FROM	TO	DATE

DATE: April 24, 1992

TO: Southern Railway - Citico Yards Site, File #33634

FROM: Craig Stannard, Geologist, CFO

SUBJECT: Demographic and Surface Water Quality Data

On 4-21-92, CJS checked with Phil Stewart (Manager, TDWPC in Chattanooga) regarding the existence of wetlands in the vicinity of the Southern Railway - Citico Yards site. Phil said that several areas bordering the Tennessee River, within a mile of the site, qualify as wetlands according to the Federal definition. However, he said none of these areas are as yet officially classified as such.

On 4-23-92, CJS telephoned Drew Thornton (TVA Data Services in Knoxville, phone: 632-2817) concerning flow data for the Tennessee River in Chattanooga. He said the average flow, taken over a period of 116 years, is 36,650 cfs. CJS then telephoned the USGS in Nashville (736-5424) and spoke with Charles Gamble concerning Citico Creek. Mr. Gamble said flow recordings they have for Citico Creek range from a low of 0.53 cfs (1973 data) to a high of 12.16 cfs (1973).

On 4-23-92, CJS telephoned the Chattanooga-Hamilton County Regional Planning Commission and spoke with Deborah Maddox (757-5216). According to Ms. Maddox, the most recent population figures for Chattanooga and Red Bank are 152,466 and 12,322 respectively.

CJS/31042114

FROM	DATE

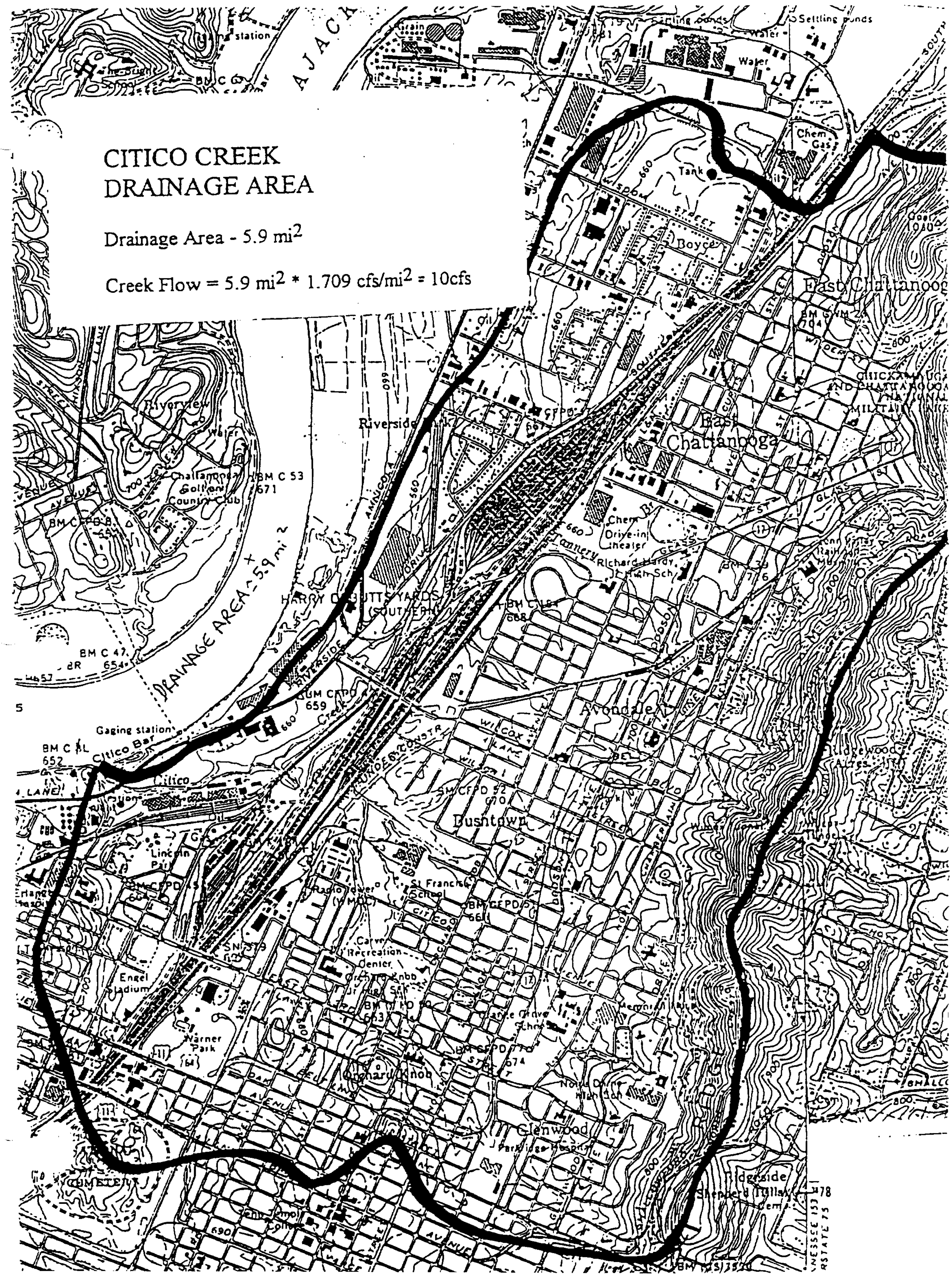
10

PH
SR

CITICO CREEK DRAINAGE AREA

Drainage Area - 5.9 mi^2

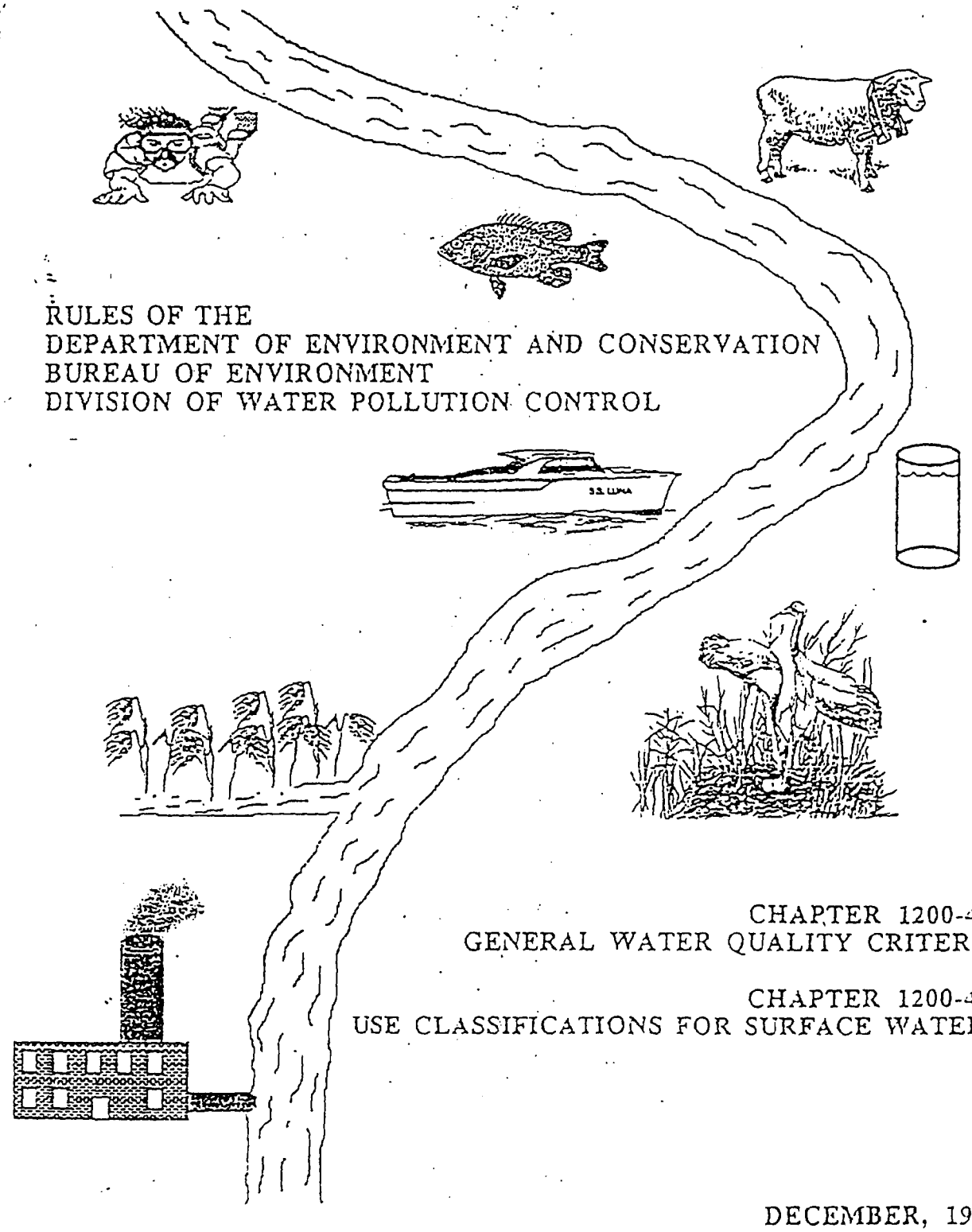
Creek Flow = 5.9 mi^2 * 1.709 cfs/mi^2 = 10cfs



Site No. TN0001087188

Ref. No. 19

STATE OF TENNESSEE
WATER QUALITY STANDARDS



RULES OF THE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
BUREAU OF ENVIRONMENT
DIVISION OF WATER POLLUTION CONTROL

CHAPTER 1200-4-3
GENERAL WATER QUALITY CRITERIA

CHAPTER 1200-4-4
USE CLASSIFICATIONS FOR SURFACE WATERS

DECEMBER, 1991

(Rule 1200—4—3—.03, continued)

(4) Recreation.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(c) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to recreation.

(d) Turbidity or Color - There shall be no turbidity or color in such amounts or character that will result in any objectionable appearance to the water.

(e) Temperature - The maximum water temperature change shall not exceed 3C° relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2C° per hour. The temperature of impoundments where stratification occurs will be measured at a depth of 5 feet, or mid-depth whichever is less, and the temperature in flowing streams shall be measured at mid-depth.

(f) Coliform - The concentration of a fecal coliform group shall not exceed 200 per 100 ml. as a geometric mean based on a minimum of 10 samples collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals of not less than 12 hours. For the purposes of determining the geometric mean, individual samples having a fecal coliform group concentration of less than 1 per 100 mL shall be considered as having a concentration of 1 per 100 mL. In addition, the concentration of the fecal coliform group in any individual sample shall not exceed 1,000 per 100 ml.

(g) Taste or Odor - The waters shall not contain substances that will result in objectionable taste or odor

(h) Toxic Substances - The waters shall not contain toxic substances, whether alone or in combination with other substances, that will render the waters unsafe or unsuitable for water contact activities including the capture and subsequent consumption of fish and shellfish, or will propose toxic conditions that will adversely affect man, animal, aquatic life, or wildlife. Human health criteria have been derived to protect the consumer from consumption of contaminated fish. The criteria for recreation are as follows:

(Rule 1200—4—3—.03, continued)

Compound	Criteria (µg/l)
INORGANICS	
Antimony	4310
Beryllium (c)	1.3
Chromium (III)	670000
Mercury	0.15
Nickel	4600
Dioxin *	0.000001
VOLATILES	
Acrolein	780
Acrylonitrile (c)	6.7
Benzene (c)	710
Bromoform - Tribromomethane (c)	4700
Carbon tetrachloride (c)	44
Chloroform - Trichloromethane (c)	4700
Dichlorobromomethane (c)	4700
1,2-Dichloroethane (c)	990
1,1-Dichloroethylene (c)	32
1,3-Dichloropropylene	1700
Ethylbenzene	29000
Methyl chloride - Chloromethane (c)	4700
Methylene chloride - Dichloromethane (c)	16000
1,1,2,2-Tetrachloroethane (c)	110
Tetrachloroethylene (c)	88
Toluene	300000
1,1,1-Trichloroethane	170000
1,1,2-Trichloroethane (c)	420
Trichloroethylene (c)	807
Vinyl chloride (c)	5250
ACID EXTRACTABLES	
2-Methyl-4,6-dinitrophenol - 4,6-Dinitro-o-cresol	765
2,4-Dinitrophenol	14000
2,4,6-Trichlorophenol (c)	6.5

Compound	Criteria (µg/l)
BASE NEUTRALS	
Acenaphthylene (c)	0.3
Anthracene	0.03
Benzo(a)anthracene (c)	0.3
Benzo(a)pyrene (c)	0.3
3,4-Benzofluoranthene (c)	0.3
Benzo(k)fluoranthene (c)	0.3
Bis(2-Chloroethyl)ether (c)	14
Bis(2-Ethylhexyl)phthalate(c)	59
Chrysene	0.03
1,2-Dichlorobenzene	17000
1,3-Dichlorobenzene	2600
1,4-Dichlorobenzene - para-Dichlorobenzene	2600
Diethyl phthalate	120000
Dimethyl phthalate	2900000
Di-n-Butyl phthalate	12000
2,4-Dinitrotoluene	42
Fluoranthene	54
Fluorene	0.03
Hexachlorobenzene (c)	0.007
Hexachlorobutadiene (c)	500
Hexachloroethane (c)	89
Nitrobenzene	1900
Phenanthrene	0.03
Pyrene	0.03
PESTICIDES	
Aldrin (c)	0.0014
g-BHC - Lindane (c)	0.63
Chlordane (c)	0.006
4,4'-DDT (c)	0.006
4,4'-DDE (c)	0.006
4,4'-DDD (c)	0.008
Dieldrin (c)	0.0014
a-Endosulfan	2
b-Endosulfan	2
Heptachlor (c)	0.002
Heptachlor epoxide (c)	0.001
PCB congeners (EPA 119-125)	0.0005
PCB, total (c)	0.001
Toxaphene (c)	0.008

(c) 10^{-5} risk level is used for all carcinogenic pollutants (Organisms Only)

* Value applies to total of toxicity equivalent factors (TEFs) of all isomers of dioxin and dibenzofurans.

(i) Other Pollutants - The waters shall not contain other pollutants in quantities which may have a detrimental effect on recreation.

(5) Irrigation.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24 hours.

(Rule 1200—4—3—.03, continued)

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the water shall not impair its use for irrigation.

(d) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water for irrigation purposes.

(e) Temperature - The temperature of the water shall not interfere with its use for irrigation purposes.

(f) Toxic Substances - The waters shall not contain toxic substances whether alone or in combination with other substances which will produce toxic conditions that adversely affect the quality of the water for irrigation.

(g) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detrimental to the waters used for irrigation.

(6) Livestock Watering and Wildlife.

(a) Dissolved Oxygen - There shall always be sufficient dissolved oxygen present to prevent odors of decomposition and other offensive conditions.

(b) pH - The pH value shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 ur in this range over a period of 24 hours.

(c) Hardness or Mineral Compounds - The hardness of or the mineral compounds contained in the wat shall not impair its use for livestock watering and wildlife.

(d) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, c slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as to terfere with livestock watering and wildlife.

(e) Temperature - The temperature of the water shall not interfere with its use for livestock watering wildlife.

(f) Toxic Substances - The waters shall not contain substances whether alone or in combination with o substances, which will produce toxic conditions that adversely affect the quality of the waters for lives watering and wildlife.

(g) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detri tal to the water for livestock watering and wildlife.

(7) Navigation.

(a) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as terfere with navigation.

(b) Other Pollutants - The waters shall not contain other pollutants in quantities which may be detr tal to the waters used for navigation.

Authority: T.C.A. §§4—5—202 and 69—3—105. Administrative History: Original rule certified June 7, 1974. A ment filed December 1, 1975; effective December 30, 1975. Amendment filed November 25, 1977; effective Dec 26, 1977. Amendment filed March 30, 1983; effective April 29, 1983. Amendment filed December 19, 1986; ef February 2, 1987. Amendment filed July 16, 1991; effective August 30, 1991.

(Rule 1200-4-4-.01, continued)

(7) Lower Tennessee River Basin (Including Conasauga Basin)

STREAM	DESCRIPTION	DOM	IND	FISH	REC	IRR	LW&W
Tennessee River	Tenn-Ala State Line (Mile 416.5) to the POT Light (Mile 448.0)	X	X	X	X	X	X
Unnamed Tributary	At Tenn. River Mile 417.5; Mile 0.0 to Origin			X	X	X	X
Battle Creek	Mile 0.0 to Origin	X	X	X	X	X	X
Big Fiery Gizzard	Mile 0.0 to Origin			X	X	X	X
Little Fiery Gizzard	Mile 0.0 to Origin			X	X	X	X
Unnamed Tributary	At Little Fiery Gizzard Mile 0.6; Mile 0.0 to Origin			X	X	X	X
Sequatchie River	Mile 0.0 to 3.5	X	X	X	X	X	X
Sequatchie River	Mile 3.5 to 41.0	X	X	X	X	X	X
Little Sequatchie River	Mile 0.0 to Origin			X	X	X	X
Cifty Creek	Mile 0.0 to Origin			X	X	X	X
Sewanee Creek	Mile 0.0 to 4.0			X	X	X	X
Sewanee Creek	Mile 4.0 to Origin	X		X	X	X	X
Holywater Creek	Mile 0.0 to Origin	X		X	X	X	X
Scott Creek	Mile 0.0 to Origin	X		X	X	X	X
Sequatchie River	Mile 41.0 to 43.9			X	X	X	X
Sequatchie River	Mile 43.9 to 74.0	X	X	X	X	X	X
Sequatchie River	Mile 74.0 to 78.4			X	X	X	X
Sequatchie River	Mile 78.4 to Origin	X	X	X	X	X	X
Coops Creek	Mile 0.0 to 0.8			X	X	X	X
Coops Creek	Mile 0.8 to Origin			X	X	X	X
Tennessee River	Mile 448.0 to 460.6 (Chattanooga Creek)		X	X	X	X	X
Shoal Creek	Mile 0.0 to Origin			X	X	X	X
Unnamed Tributary	At Tenn. River Mile 458.7; Mile 0.0 to Origin			X	X	X	X
Lookout Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X
Black Creek	Mile 0.0 to 1.6			X	X	X	X
Black Creek	Mile 1.6 to Origin			X	X	X	X
Chattanooga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X
Tennessee River	Mile 460.6 to 499.4 (Hiwassee)	X	X	X	X	X	X
Citico Creek	Mile 0.0 to Origin			X	X	X	X
South Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X
Friar Branch	Mile 0.0 to Origin			X	X	X	X
West Chickamauga Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X
Spring Creek	Mile 0.0 to Georgia-Tenn State Line		X	X	X	X	X
Mackey Branch	Mile 0.0 to Origin			X	X	X	X
Ryall Springs Branch	Mile 0.0 to Origin			X	X	X	X
Unnamed Tributary	At Tenn. River Mile 469.2; Mile 0.0 to 1.5			X	X	X	X
Unnamed Tributary	Mile 1.5 to Origin			X	X	X	X
North Chickamauga Creek	Mile 0.0 to Origin			X	X	X	X
Unnamed Tributary	At N. Chickamauga Creek Mile 0.7; Mile 0.0 to 0.3			X	X	X	X
Unnamed Tributary	Mile 0.3 to Origin			X	X	X	X
Unnamed Tributary	Mile 1.0 to Origin			X	X	X	X
Wolftever Creek	Mile 0.0 to Origin			X	X	X	X
Sale Creek	Mile 0.0 to Origin			X	X	X	X
Roaring Creek	Mile 0.0 to Origin			X	X	X	X
Brush Creek	Mile 0.0 to 2.5			X	X	X	X

Site No. TN 0001716067
Ref. No. 29

Site No. TN0001087188

Ref. No. 10

GROUND ENGINEERING & TESTING SERVICE

A DIVISION OF ATLANTA TESTING & ENGINEERING

FACSIMILE TRANSMITTAL SHEET

TO: Janet Dutto	FROM: Scott Hensley
COMPANY: TDEC	DATE: 12/16/98
FAX NUMBER: 634-6389	TOTAL NO. OF PAGES INCLUDING COVER: 14
PHONE NUMBER: 624-9921	SENDER'S REFERENCE NUMBER:
RE: East Lake Middle Closure	

NOTES/COMMENTS:

3903 VOLUNTEER DRIVE, SUITE 400
CHATTANOOGA, TN 37416
PHONE:(423) 499-0957 FAX:(423)499-5070

December 15, 1998

Mr. Ronnie Bowers
Tennessee Department of Environment and Conservation
Division of Solid Waste Management
L & C Towers, 5th Floor
401 Church Street
Nashville, TN 37243-1535

DRAFT

Subject: East Lake Middle School
Lead Contaminated Soil Removal, Storage, and Disposal
Project No. 1412-A
TDEC Installation Identification No. TNR-000007104

Dear Mr. Bowers:

This follows up on our discussion and presents Ground Engineering's closure for the remediation of lead contaminated soils on the East Lake Middle School Site. Please reference our report to TDEC dated November 2, 1998.

SITE DESCRIPTION

The site is a 3.2 acre parcel bounded by 34th Street, Dodds Ave., 36th Street, and the railroad to the west. The site slopes slightly from east to west with a drain traversing the site east to west near 35th Street. The ditch has been replaced by a box culvert as part of the site development. Site grading is underway for construction of new school facilities.

BACKGROUND

During the foundation excavation and associated testing an area was discovered containing suspect material. To identify the extent of the soft soil and potentially regulated materials, seven test pits were excavated and test samples taken.

The seven test pits were completed under the direction of an industrial hygienist in an effort to delineate the lateral and vertical extent of the material. Grab samples of surface soil, perched water, and uncovered materials were also collected for possible analyses or evaluation. Some suspect material appeared to contain paint. Table 1 (Appendix A) summarizes the type sample taken and the respective initial test locations.

Based on analyses of samples taken from the suspected area, the soil material appeared to be regulated based on lead content (apparently from observed lead paint). No other constituents that exceeded allowable limits were identified in the soil material samples taken.

Samples were taken outside of the affected area to establish background lead levels. The results of these tests are shown in Table 3 (Appendix B).

The site, site layout, contaminated area, and test locations are shown in Figure 1(Appendix A).

REMOVAL AND SAMPLING

Removal of lead contaminated soils was performed by Marion Environmental, Inc. (MEI) of Chattanooga, Tennessee, under the direction of Ground Engineering. Soils from the identified contaminated area were excavated. As the excavation proceeded, Ground Engineering's site manager visually examined the soils for evidence of paint. Obviously contaminated soil was removed, loaded onto trucks, and taken to Environmental Quality Company (EQ) of Belleville, Michigan. Soils that appeared to be non-contaminated were separated and placed to the side for confirmatory testing. Perched water trapped within the excavation was removed and taken to Moccasin Bend Wastewater Treatment Plant of Chattanooga, Tennessee. Samples of the water were tested for lead content before removal.

Continuous sampling was performed to delineate the lateral and vertical extent of the material and to determine which soils were hazardous and non-hazardous. Samples were taken on the walls and floor of the completed excavation to confirm the limits of the contamination had been reached.

ANALYTICAL PROTOCOL

Environmental Science Corporation, Inc. (ESC) of Mt. Juliet, Tennessee, performed the initial analyses on the collected samples. Tests performed are summarized in Table 2 (Appendix A). The analyses performed were selected based on apparent composition and origin of the material.

Analytical Industrial Research Laboratories, Inc. of Chattanooga/Cleveland, Tennessee, performed the analyses on the background, removal and confirmation samples collected. The analyses performed were selected based on the results of initial testing which indicated the regulated material to be lead. These test results are shown in Tables 5 and 6 (Appendix B).

FINDINGS & CONCLUSIONS

After our review of the site and the final laboratory tests we consider the removal of lead contaminated soil from the East Lake Middle School site to be complete.

- Approximately 1235.5 tons of contaminated soils were excavated, loaded directly to Licensed Haulers under the direct control of the contractor, and transported to EQ. The EQ receipt list is shown in Table 4.

- The analytical results provided show the lateral and vertical limits of the contamination were reached and the regulated material was removed. The regulated material was in the form of solid chunks of lead-based paint, apparently in wooden kegs. Based on the age of the site (80-100 years) and the results of the analyses performed we believe the contamination was confined and has not migrated over time.

- The majority of water removed from the site was perched water trapped in the foundry sand within the contaminated area. No seepage into the excavation was observed. The water that has since been removed was a result of storm water or water used to decontaminate equipment used on site. Therefore, we do not consider groundwater contamination to be a concern. A confirmation sample will be taken 2 to 3 feet below the lateral level of the regulated material. Collection of this sample has been delayed until water from recent heavy rains can be removed. The result will be reported to the Tennessee Department of Environment and Conservation (TDEC).

- The removal process has been completed. The excavated area will be backfilled with a good quality, low permeability material and approximately three (3) feet of engineered backfill will be placed over the area. The entire area will be covered by the new building or by paved driveways, consequently the entire area will be encapsulated. Thus, there will be no rainfall or surface water infiltration in this area of the site.

- There is still approximately 109 tons of non-contaminated soils stock piled on site. We are awaiting approval from the State of Tennessee to remove and transport these soils to a non-hazardous landfill.

It is our professional opinion that the lead contaminated soils at the East Lake Middle School Site have been removed. We recommend no further action, once the backfill is complete, and the non-contaminated soils are removed.

Sincerely,

GROUND ENGINEERING AND TESTING SERVICE
A Division of Atlanta Testing and Engineering

Mack B. McCarley, P.E.
Senior Engineer

Richard M. Gibbs, P.E.
Vice President

J. Scott Hensley
Staff Engineer

MBM:RMG:JSH/cd

cc: Janet Dutto (TDEC)
Gary Waters (Hamilton County)
Indu Thaker (Hamilton County)

APPENDIX A

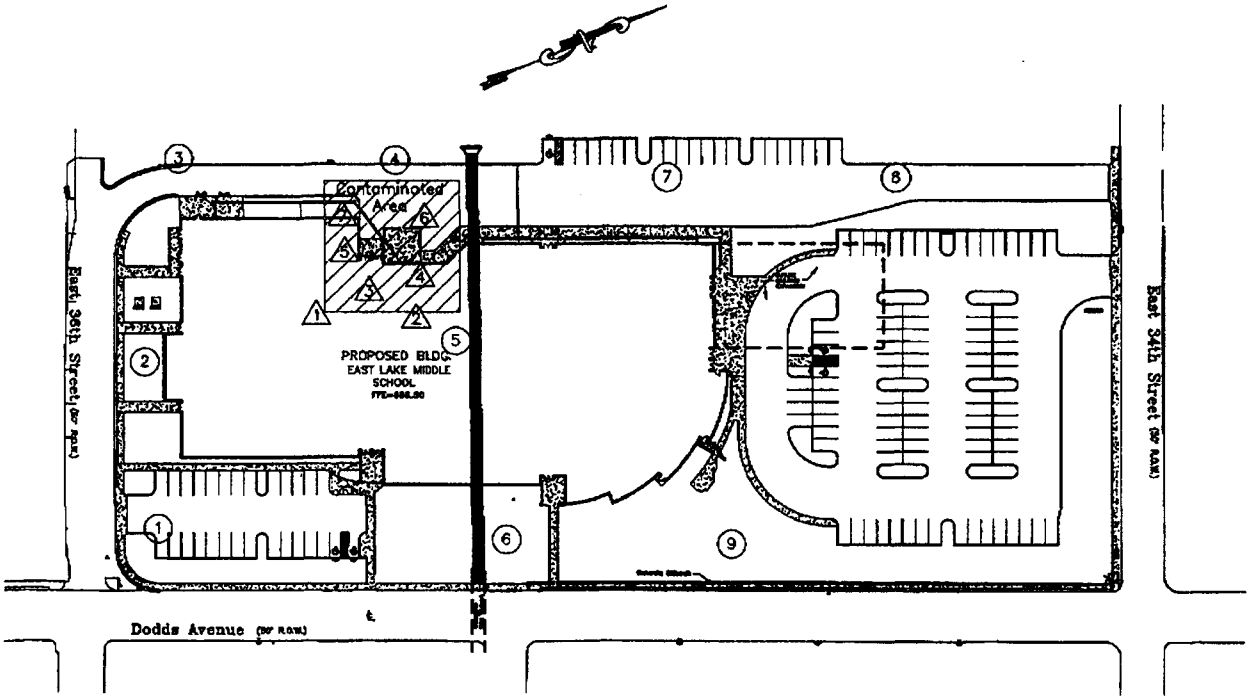
DATA PREVIOUSLY REPORTED

Sample	Location	Description
001	Test Pit 6	Soil sample from side of test pit
002	Test Pit 4	Soil sample from side of test pit
003	Surface	Soil ground surface
004	Surface	Soil ground surface
005	Surface	Soil ground surface
007	Test Pit 7	Cuttings-Soil from material excavated from test pit
008	Surface	Soil sample near surface
009	Test Pit 6	Cuttings soil from material excavated from test pit
010	Surface	Soil sample near surface
011	Surface	Soil sample near surface
012	Surface	Soil sample near surface
013	Test Pit 4	Cuttings sample from material excavated from test pit
014	Surface	Wood appeared to be part of wood keg
015	Test Pit 1	Metal Plate found in test pit
016	Test Pit 1	Water - Perch water in sand layer on top of waste area
017	Test Pit 7	Water - Perch water in sand layer on top of waste area
Hole #1 West	Test Pit 7	Water - Perch water in sand layer on top of waste area
Hole #2 East	Test Pit 1	Water - Perch water in sand layer on top of waste area

Table 1 - Summary of Sampling Locations and Descriptions

Matrix	Parameter	Method	Samples
Soil/Solid	Lead	6010A	001, 002, 003, 004, 005, 007, 008, 009, 010, 011, 012, 013, 014, 015
	PCBs	8081	001, 002, 003, 004, 005
	TCLP, Full	Various	Composite - 001 through 005
Perched Water	Cadmium, Chromium, Lead	200.7	016, 017
	Volatile Organic Compounds	8260	Hole #1 West, Hole #2 East
	Base Neutral/Acid Extractables (Semi-Volatile Compounds)	8270	Hole #1 West, Hole #2 East

Table 2 - Summary of Analytical Protocol



△ Location of Test Pits

(6) Location of Background Samples (Sample #8 destroyed in transit)

AT&E Ground Engineering & Testing Service	SITE LAYOUT PLAN EAST LAKE MIDDLE SCHOOL CHATTANOOGA, TN	DATE: 11-24-98	CHECKED BY:	REPORT NO.: N/A
		CAD FILE: 1412A	VERT. SCALE: N/A	JOB NO.: 1412-A
		DRAWN BY: RMG	HORIZ. SCALE: N/A	PLATE No.: C

APPENDIX B

DATA FROM SOIL REMOVAL AND DISPOSAL

East Lake Middle School

Site Background Samples

Test Number	Analysis	Result	Units
1	TCLP	< 0.050	mg/l
2	TCLP	0.075	mg/l
3	TCLP	< 0.050	mg/l
4	TCLP	< 0.050	mg/l
5	TCLP	< 0.050	mg/l
6	TCLP	< 0.050	mg/l
7	TCLP	< 0.050	mg/l
8	TCLP	Destroyed	mg/l
9	TCLP	< 0.050	mg/l
NOTE: Sample 8 was destroyed during shipment.			

Table 3

Summary of Background Lead Test Results

East Lake Middle School

Environmental Quality (Eq) Receipt List

Load Number	Manifest Number	Quantity (tons)
1	MI 7123402	23.88
2	MI 7123403	23.89
3	MI 7123404	22.40
4	MI 7123405	24.08
5	MI 7123406	24.54
6	MI 7123407	24.19
7	MI 7123408	23.83
8	MI 7123409	24.42
9	MI 7123410	24.08
.10	MI 7123411	22.05
11	MI 7123412	23.83
12	MI 7123413	18.72
13	MI 7123414	21.59
14	MI 7123415	18.20
15	MI 7123416	20.28
16	MI 7123417	19.44
17	MI 7123418	22.45
18	MI 7123419	24.82
19	MI 7123420	23.30
20	MI 7123421	22.87
21	MI 7123422	23.85
22	MI 7123423	21.84
23	MI 7123424	23.40
24	MI 7123425	22.93
25	MI 7123426	25.14
26	MI 7123427	22.46
27	MI 7123428	23.32
28	MI 7123429	22.12
29	MI 7123430	22.20
30	MI 7123431	23.48
31	MI 7123432	21.97
32	MI 7123433	19.16
33	MI 7123434	18.47
34	MI 7123435	20.36

Load Number	Manifest Number	Quantity (tons)
35	MI 7123436	22.33
36	MI 7123437	23.71
37	MI 7123438	25.07
38	MI 7123439	22.71
39	MI 7123440	20.77
40	MI 7123441	24.74
41	MI 7123442	25.11
42	MI 7123443	24.23
43	MI 7123444	23.38
44	MI 7123445	22.32
45	MI 7123446	23.61
46	MI 7123447	22.32
47	MI 7123448	24.37
48	MI 7123449	25.24
49	MI 7123450	22.06
50	MI 7123451	23.89
51	MI 7123452	25.67
52	MI 7123453	25.15
53	MI 7123454	22.33
54	MI 7123455	23.88
	Total Soil Quantity	**1,235.55**

Table 4

Summary of Environmental Quality (EQ) Receipt List

East Lake Middle School

Soil Confirmation Analytical Results

Test Number	Location	Sample Date	Result	
			TCLP mg/l	Total mg/kg
19	Limit 1	11/23/98	0.50	90.3
20	Limit 2	11/23/98	4.66	1620.0
21	Limit 3	11/23/98	3.94	502.0
22	Limit 4	11/23/98	0.50	32.8.
23	Limit 5	11/23/98	13.90	3620.0
37	Limit 5 Retest	12/04/98	0.50	84.1
24	Limit 6	11/24/98	1.18	749.0
25	Limit 7	11/24/98	0.50	32.2
26	Limit 8	11/24/98	131.00	4740.0
38	Limit 8 Retest	12/04/98	189.00	14000.0
41	Limit 8 Retest	12/08/98	0.50	17.6
27	Limit 9	11/24/98	8.21	3720.0
39	Limit 9 Retest	12/04/98	0.50	73.8
28	Limit 10	11/24/98	3.33	629.0
29	Limit 11	11/24/98	53.60	6800.0
40	Limit 11 Retest	12/04/98	0.50	17.4
30	Limit 12	11/24/98	0.50	156.0
32	Limit 13	11/25/98	0.50	113.0
33	Limit 14	11/25/98	0.50	17.1
34	Limit 15	11/25/98	0.50	322.0
35	Limit 16	11/25/98	5.14	1780.0
36	Limit 17	11/25/98	0.50	152.0
42	Limit 18	12/08/98	0.50	70.7

PERCHED WATER SAMPLES

Test Number	Location	Date	Result (Mg/l)
1A	Excavation	11/11/98	0.842
31	Excavation	11/24/98	0.255

Table 5

Summary of Confirmation/Limit Test Results

Site No. TN0001087188

Ref. No. 20

ANNUAL SUMMARY OF CREED DATA FOR ALL ANGLERS BY RESERVOIR-1991

RESERVOIR=NICKAJACK

COMMON NAME	ESTIMATED NUMBER CAUGHT	ESTIMATED NUMBER HARVESTED	NUMBER CAUGHT PER HOUR	NUMBER HARVESTED PER HOUR	MEAN WEIGHT	PERCENT HARVESTED	NUMBER CREELED
GOLDEN SHINER	280.74	280.74	0.00	0.00	0.28	100.00	6
FLATHEAD CATFISH	374.33	374.33	0.00	0.00	2.25	100.00	8
BLUE CATFISH	8609.49	8094.79	0.03	0.03	3.27	94.02	184
CHANNEL CATFISH	23301.77	21944.84	0.09	0.08	2.00	94.18	498
BULLHEAD	421.12	421.12	0.00	0.00	2.34	100.00	9
FRESHWATER DRUM	3649.68	1263.35	0.01	0.00	8.53	34.62	78
WHITE BASS	3509.30	2994.61	0.01	0.01	0.78	85.33	75
YELLOW BASS	5942.42	4257.95	0.02	0.02	0.36	71.65	127
YELLOW PERCH	3930.42	3415.72	0.01	0.01	0.37	86.90	84
LARGEMOUTH BASS	59985.69	6691.07	0.23	0.03	2.26	11.15	1282
SMALLMOUTH BASS	1216.56	140.37	0.00	0.00	2.50	11.54	26
SPOTTED BASS	1122.98	655.07	0.00	0.00	1.07	58.33	24
WHITE CRAPPIE	2901.02	2433.12	0.01	0.01	0.61	83.87	62
BLACK CRAPPIE	4959.82	4538.70	0.02	0.02	0.66	91.51	106
UNIDENTIFIED SUNFISH	1450.51	1310.14	0.01	0.00	0.39	90.32	31

ANNUAL SUMMARY OF CREEL DATA FOR ALL ANGLERS BY RESERVOIR-1991

RESERVOIR=NICKAJACK

COMMON NAME	ESTIMATED NUMBER CAUGHT	ESTIMATED NUMBER HARVESTED	NUMBER CAUGHT PER HOUR	NUMBER HARVESTED PER HOUR	MEAN WEIGHT	PERCENT HARVESTED	NUMBER CREELED
BLUEGILL	67986.90	60640.76	0.26	0.23	0.34	89.19	1453
REDEAR SUNFISH	5708.47	5380.93	0.02	0.02	0.38	94.26	122
WARMOUTH	93.58	93.58	0.00	0.00	0.35	100.00	2

Site No. TN0001087188

Ref. No. 21

NNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

VISION OF SUPERFUND

FICE MEMORANDUM

TE: January 20, ~~1992~~ 1994

: General File

M: Don VanHook

BJECT: Fish Harvest from fisheries

talked with several members of the Tennessee Department of vironment and Conservation about their estimates for fish rvested from below waterbodies. These people were fisherman selves and some worked in the water pollution division. An timated average amount is given as follows:

Chattanooga Creek: Dobbs Br. to TN river	20 fish lbs./ year
Tennessee River, Chatt to Suck Cks.:	3000 fish lbs./ year

Site No. TN0001087188

Ref. No. 22

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
401 Church Street
Nashville, Tennessee 37243

December 20, 1994

Mr. Curt Spaeth
Department of Environment and Conservation
Division of Superfund
Chattanooga Environmental Field Office
540 McCallie Ave., Suite 550
Chattanooga TN 37402-2013

Subject: Project review information for endangered species and critical or sensitive habit

Dear Mr. Spaeth:

Please be advised that a review of our Departmental data bases indicates recorded threatened and/or endangered species within an approximate four mile radius of the proposed project site. addition, watersheds have been reviewed for potential impact 15 miles downstream of the proposed project site. The review is for the proposed Wisdom Street Brush Dump, along Citico Creek, Bradley County project site. The information is listed by quad map and is attached.

The results of our review do not mean that a comprehensive biological survey has been completed. We would suggest that a survey of the project sites be conducted subsequent to construction. Please notify our office of your findings.

Please do not make public the exact location of any element listed here-in, as this could lead to possible over-collection and abuse.

In addition to the species listing by quad map, information is being provided on special habitat sites or natural areas. The following natural areas or special concern habitats should be avoide

- *Amnicola Marsh*
- *Aububon Society Wildlife Refuge, Macellan Island*
- *Please see attached listings.*

In order to comply with the National Environmental Policy Act consideration should be given tc the comprehensive and *cumulative* impacts associated with the project actions. Based upon the information provided, it is probable that any proposed stream crossing will impact instream, aquatic, habitat and riparian habitat as part of the construction.

Techniques for streamside reconstruction and sediment retention are outlined in the following documents prepared by our Department:

1. Tennessee Erosion Control Handbook, July 1992.

2. Reducing Nonpoint Source Water Pollution by Preventing Soil Erosion and Controllin Sediment on Construction Sites, March 1992.

3. Riparian Restoration and Streamside Erosion Control Handbook, November 1994

Please refer to the documents when planning measures to lessen the construction impacts.

We appreciate the opportunity to assist you with your pre-project planning. If we can be of further assistance with your project please contact our office in Nashville, telephone 615/532-0431.

Respectfully,

Andrew N. Barrass Ph. D.,
Environmental Review Coordinator
Division of Ecological Services

Attachments: (5)

DESCRIPTION OF ENDANGERED OR THREATENED SPECIES DATA BASE LIST

The following list defines species record occurrences for the various quad maps or data base searched for potential project impact. The list includes name of the *Quad* map, *Species* nam species *Common* name and the *State or Federal listing* status.

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
INVERTEBRATES			
CAMBARUS EXCRANEUS	CHICKAMAUGA CRAYFISH	C2	
DROMUS DROMAS	DROMEDARY PEARLYMUSSEL	LE	E
EPIOBLASMA TORULOSA	TUBERCULED-BLOSSOM		
LAMPSILIS ABRUPTA	PINK MUCKET	LE	E
LITHASIA GENICULATA	GIRDLE ROCKSNAIL	C2	
LITHASIA VERRUCOSA	VARICOSE ROCKSNAIL	C2	
PLETHOBASUS COOPERIANUS	ORANGE-FOOT PIMPLEBACK	LE	E
QUADRULA INTERMEDIA	CUMBERLAND MONKEYFACE	LE	E
OTHERS			
HERON ROOKERY	HERON ROOKERY		
PLANTS			
AURELARIA PATULA	SPREADING FALSE-FOXGLOVE	C2	T
DIERVILLA SESSILIFOLIA VAR RIVULARIS	MOUNTAIN BUSH-HONEYSUCKLE		T
GELSEMIUM SEMPERVIRENS	YELLOW JESSAMINE		S
GLYCERIA ACUTIFLORA	SHARP-SCALED MANNA-GRASS		S
GRATIOLA FLORIDANA	FLORIDA EDGE-HYSSOP		E
ISOTRIA MEDEOLOIDES	SMALL WHORLED POGONIA	LEPT	E
LILIUM PHILADELPHICUM	WOOD LILY		E
LONICERA FLAVA	YELLOW HONEYSUCKLE		S
LYSIMACHIA FRASERI	FRASER'S LOOSESTRIFE	C2	E
PANAX QUINQUEFOLIUS	AMERICAN GINSENG	3C	T
PLATANTHERA INTEGRILABIA	WHITE FRINGELESS ORCHID	C2	E
POTAMOGETON EPIHYDRUS ✓	NUTTALL PONDWEED		S
SABATIA CAPITATA	ROSE GENTIAN		E
SAXIFRAGA CAREYANA	CAREY SAXIFRAGE	3C	S
SCUTELLARIA MONTANA	LARGE-FLOWERED SKULLCAP	LE	E
SILPHIUM LACINIATUM	COMPASS PLANT		T
TALINUM TERETIFOLIUM	ROUNDLEAF FAMEFLOWER		T
TRILLIUM LANCIFOLIUM	LANCE-LEAF TRILLIUM		E
TRILLIUM RUGELII	SOUTHERN NODDING TRILLIUM		E
VIOLA TRIPARTITA VAR TRIPARTITA	THREE-PARTED VIOLET		S
WOODWARDIA VIRGINICA	VIRGINIA CHAINFERN		S
VERTEBRATES			
AIMOPHILA AESTIVALIS	BACHMAN'S SPARROW	C2	E
AMEIDES AENEUS	GREEN SALAMANDER	C2NL	D
ANOLIS CAROLINENSIS	GREEN ANOLE		D
BUTEO LINEATUS	RED-SHOULDERED HAWK		D
FALCO PEREGRINUS	PEREGRINE FALCON	E/SA	E
GYRINOPHILUS PALLEUCUS	TENNESSEE CAVE SALAMANDER	C2	T
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	LELT	E
IXOBRYCHUS EXILIS	LEAST BITTERN		D
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER		D
NYCTANASSA VIOLACEA	YELLOW-CROWNED NIGHT-HERON ✓		
PERCINA TANASI	SNAIL DARTER	LT	T
RALLUS ELEGANS	KING RAIL ✓		

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
RALLUS LIMICOLA	VIRGINIA RAIL		
TYTO ALBA	COMMON BARN-OWL		D

44 Records Processed

SCOMMA.......

CHICKAMAUGA CRAYFISH	CAMBARUS EXTRANEUS	EAST CHATTANOOGA
YELLOW-CROWNED NIGHT-HERON	NYCTANASSA VIOLACEA	EAST CHATTANOOGA
SNAIL DARTER	PERCINA TANASI	EAST CHATTANOOGA
SNAIL DARTER	PERCINA TANASI	EAST CHATTANOOGA
SNAIL DARTER	PERCINA TANASI	EAST CHATTANOOGA
SNAIL DARTER	PERCINA TANASI	EAST CHATTANOOGA
SNAIL DARTER	PERCINA TANASI	EAST CHATTANOOGA
ORANGE-FOOT PIMPLEBACK	PLETHOBASUS COOPERIANUS	EAST CHATTANOOGA
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	EAST CHATTANOOGA
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	EAST CHATTANOOGA
LANCE-LEAF TRILLIUM	TRILLIUM LANCIFOLIUM	EAST CHATTANOOGA
SOUTHERN NODDING TRILLIUM	TRILLIUM RUGELII	EAST CHATTANOOGA
SOUTHERN NODDING TRILLIUM	TRILLIUM RUGELII	EAST CHATTANOOGA
SOUTHERN NODDING TRILLIUM	TRILLIUM RUGELII	EAST CHATTANOOGA
BACHMAN'S SPARROW	AIMOPHILA AESTIVALIS	CHATTANOOGA
GREEN SALAMANDER	ANEIDES AENEUS	CHATTANOOGA
GREEN ANOLE	ANOLIS CAROLINENSIS	CHATTANOOGA
SPREADING FALSE-FOXGLOVE	AUREOLARIA PATULA	CHATTANOOGA
RED-SHOULDERED HAWK	BUTEO LINEATUS	CHATTANOOGA
MOUNTAIN BUSH-HONEYSUCKLE	DIERVILLA SESSILIFOLIA VAR RIVULARI	CHATTANOOGA
DROMEDARY PEARLYMUSSEL	DROMUS DROMAS	CHATTANOOGA
DROMEDARY PEARLYMUSSEL	DROMUS DROMAS	CHATTANOOGA
TUBERCULED-BLOSSOM	EPIOBLASMA TORULOSA	CHATTANOOGA
YELLOW JESSAMINE	GELSEMIUM SEMPERVIRENS	CHATTANOOGA
FLORIDA HEDGE-HYSSOP	GRATIOLA FLORIDANA	CHATTANOOGA
TENNESSEE CAVE SALAMANDER	GYRINOPHILUS PALLEUCUS	CHATTANOOGA
HERON ROOKERY	HERON ROOKERY	CHATTANOOGA
LEAST BITTERN	IXOBRYCHUS EXILIS	CHATTANOOGA
WOOD LILY	LILIUM PHILADELPHICUM	CHATTANOOGA
SWAINSON'S WARBLER	LIMNOTHLYPIS SWAINSONII	CHATTANOOGA
ORNATE ROCKSNAIL	LITHASIA GENICULATA	CHATTANOOGA
VARICOSE ROCKSNAIL	LITHASIA VERRUCOSA	CHATTANOOGA
VARICOSE ROCKSNAIL	LITHASIA VERRUCOSA	CHATTANOOGA
YELLOW HONEYSUCKLE	LONICERA FLAVA	CHATTANOOGA
FRASER'S LOOSESTRIFE	LYSIMACHIA FRASERI	CHATTANOOGA
YELLOW-CROWNED NIGHT-HERON	NYCTANASSA.VIOLACEA	CHATTANOOGA
AMERICAN GINSENG	PANAX QUINQUEFOLIUS	CHATTANOOGA
SNAIL DARTER	PERCINA TANASI	CHATTANOOGA
ORANGE-FOOT PIMPLEBACK	PLETHOBASUS COOPERIANUS	CHATTANOOGA
NUTTALL PONDWEED	POTAMOGETON EPIHYDRUS	CHATTANOOGA
CUMBERLAND MONKEYFACE	QUADRULA INTERMEDIA	CHATTANOOGA
KING RAIL	RALLUS ELEGANS	CHATTANOOGA
VIRGINIA RAIL	RALLUS LIMICOLA	CHATTANOOGA
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	CHATTANOOGA
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	CHATTANOOGA
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	CHATTANOOGA
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	CHATTANOOGA
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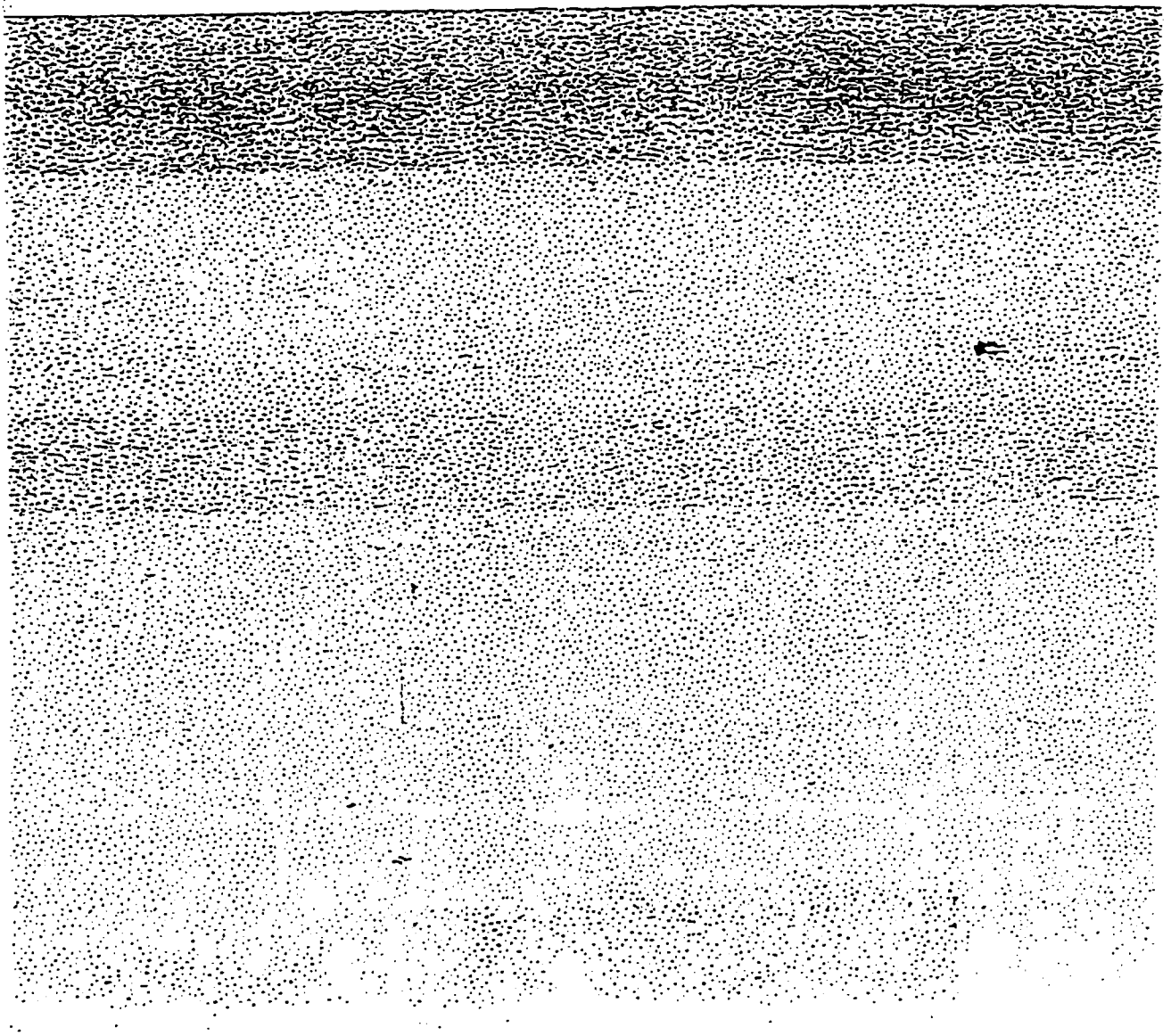
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	CHATTANOOGA
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	CHATTANOOGA

COMPASS PLANT	SILPHIUM LACINIATUM	CHATTANOOGA
LANCE-LEAF TRILLIUM	TRILLIUM LANCIFOLIUM	CHATTANOOGA
COMMON BARN-OWL	TYTO ALBA	CHATTANOOGA
TEREE-PARTED VIOLET	VIOLA TRIPARTITA VAR TRIPARTITA	CHATTANOOGA
TEREE-PARTED VIOLET	VIOLA TRIPARTITA VAR TRIPARTITA	CHATTANOOGA
TEREE-PARTED VIOLET	VIOLA TRIPARTITA VAR TRIPARTITA	CHATTANOOGA
TEREE-PARTED VIOLET	VIOLA TRIPARTITA VAR TRIPARTITA	CHATTANOOGA
TEREE-PARTED VIOLET	VIOLA TRIPARTITA VAR TRIPARTITA	CHATTANOOGA
BACHMAN'S SPARROW	AIMOPHILA AESTIVALIS	DAISY
GREEN ANOLE	ANOLIS CAROLINENSIS	DAISY
YELLOW JESSAMINE	GELSEMIUM SEMPERVIRENS	DAISY
BALD EAGLE	HALIAEETUS LEUCOCEPHALUS	DAISY
PINK MUCKET	LAMPSILIS ABRUPTA	DAISY
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	DAISY
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	DAISY
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	DAISY
TEREE-PARTED VIOLET	VIOLA TRIPARTITA VAR TRIPARTITA	DAISY
GREEN ANOLE	ANOLIS CAROLINENSIS	FAIRMOUNT
RED-SHOULDERED HAWK	BUTEO LINEATUS	FAIRMOUNT
PEREGRINE FALCON	FALCO PEREGRINUS	FAIRMOUNT
SHARP-SCALED MANNA-GRASS	GLYCERIA ACUTIFLORA	FAIRMOUNT
SMALL WHORLED POGONIA	ISOTRIA MEDEOLOIDES	FAIRMOUNT
WHITE FRINGELESS ORCHID	PLATANTHERA INTEGRILABIA	FAIRMOUNT
ROSE GENTIAN	SABATIA CAPITATA	FAIRMOUNT
ROSE GENTIAN	SABATIA CAPITATA	FAIRMOUNT
CAREY SAXIFRAGE	SAXIFRAGA CAREYANA	FAIRMOUNT
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	FAIRMOUNT
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	FAIRMOUNT
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	FAIRMOUNT
LARGE-FLOWERED SKULLCAP	SCUTELLARIA MONTANA	FAIRMOUNT
ROUNDLEAF FAMEFLOWER	TALINUM TERETIFOLIUM	FAIRMOUNT
VIRGINIA CHAINFERN	WOODWARDIA VIRGINICA	FAIRMOUNT

87 Records Processed

DESCRIPTION OF ENDANGERED OR THREATENED SPECIES DATA BASE LIST

The following list defines species record occurrences for natural areas or special habitats for various quad maps or data bases searched for potential project impact. The list includes *Site* name, *Species* name, and name of the of the *Quad* map where species record is found.



LOOKOUT CAVE PROTECTION PLANNING SITE	GYRINOPHILUS PALLEUCUS	
OLD BOG LOT ORCHID SITE PROTECTION PLANNING SITE	ISOTRIA MEDEOLOIDES	
AMNICOLA MARSH STATE WILDLIFE OBSERVATION AREA	NYCTANASSA VIOLACEA	
HAMPTON SWAMP	PLATANTHERA INTEGRILABIA	
AMNICOLA MARSH STATE WILDLIFE OBSERVATION AREA	POTAMOGETON EPIHYDRUS	
AMNICOLA MARSH STATE WILDLIFE OBSERVATION AREA	RALLUS ELEGANS	
AMNICOLA MARSH STATE WILDLIFE OBSERVATION AREA	RALLUS LIMICOLA	
HAMPTON SWAMP	SABATIA CAPITATA	
HAMPTON SWAMP	SCUTELLARIA MONTANA	
AMNICOLA MARSH STATE WILDLIFE OBSERVATION AREA	TYTO ALBA	
TENNESSEE RIVER GORGE MACROSITE		CEATIANC
EDWARDS POINT SANDSTONE OUTCROPS		CEATIANC
LOOKOUT CAVE PROTECTION PLANNING SITE	AMEIDES AENEUS	CEATIANC
AMNICOLA MARSH STATE WILDLIFE OBSERVATION AREA	DICERYCHUS EXILIS	CEATIANC
TENNESSEE RIVER GORGE MACROSITE		WAUBATC
EDWARDS POINT SANDSTONE OUTCROPS		WAUBATC
TENNESSEE RIVER GORGE MACROSITE		SEQUATC
EDWARDS POINT SANDSTONE OUTCROPS		FAIRMON
HAMPTON SWAMP	BUTEO LINEATUS	FAIRMON
OLD BOG LOT ORCHID SITE PROTECTION PLANNING SITE	SCUTELLARIA MONTANA	FAIRMON
EDWARDS POINT SANDSTONE OUTCROPS		KETNER

21 Records Processed

Federal Status Definitions of Tennessee's Rare Plants and Animals

Federally listed species are protected by the Endangered Species Act of 1973 and is administered and determined by the US Fish and Wildlife Service.

E/SA - Endangered by Similarity of Appearance.

LE - Listed Endangered, the taxon is threatened by extinction throughout all or a significant portion of its range.

LT - Listed Threatened, a taxon is likely to be endangered in the foreseeable future.

PE - Proposed Endangered, the taxon is proposed for listing as endangered.

PT - Proposed Threatened, the taxon is proposed to be listed as threatened.

S - Synonyms

C1 - Candidate, Category 1. There is enough available information to proposed the taxon for listing, but listing is "precluded by other pending proposals of higher priority." Included are those taxa whose status in recent past is known, but may have already become extinct. Such possibly extinct taxa are indicated by an asterisk (*). Double asterisk (**) indicate taxa believed to be extinct in the wild, but known to be extant in cultivation.

C2 - Candidate, Category 2. There is enough information available to list the taxon as endangered or threatened, but substantial information regarding biological vulnerability and threat(s) are not currently known or on file to support a proposed rule.

C3 - Candidate, Category 3. Taxa are no longer being considered for listing as threatened or endangered species. The following subcategories are used to further indicate the reason(s) for removal from consideration.

3A - Taxa for which the US Fish and Wildlife Service has persuasive evidence of extinction of being destroyed. If recovered such taxa might acquire high priority for listing.

3B - Names that on the basis of current taxonomic understanding do not represent taxa meeting the Acts definition of "species." Such proposed taxa could be reevaluated in the future on the basis of subsequent research.

3C - taxa has proven to be more abundant or widespread than was previously believed and/or those that are not subject to any identifiable threat.

Note: The taxa listed in categories 1 and 2 may be considered candidates for addition to the list of Endangered and Threatened plants and animals, and, as such, consideration should be given them in environmental planning.

(Federal Register, 50(188), Sept. 18, 1985, pp.37958-37959, and Sept. 27, 1985, pp. 39526-39527.)

State Status Definitions of Tennessee's Rare Plants

State Status indicates which plants are formally listed as state endangered or threatened under the authority of the Tennessee Department of Environment and Conservation. The Department has the valuable assistance of the State's best field botanist, twelve of whom serve on the Scientific Advisory Committee which periodically reviews the list.

E - Endangered, species now in danger of becoming extinct in Tennessee because of:

(a) their rarity throughout their range, or

(b) their rarity in Tennessee as a result of sensitive habitat destruction or restricted area of distribution.

E* - Taxa considered to be Endangered in Tennessee due to evidence of large numbers being taken from the wild and lack of commercial success with propagation or transplantation.

T - Threatened, species likely to become endangered in the immediately foreseeable futur as a result of rapid habitat destruction or commercial exploitation.

S - Special Concern, species requiring concern because of:

(a) their rarity in Tennessee because the State represents the limit or near-limi their geographic range, or

(b) their status is undetermined because of insufficient information.

P - Possibly Extirpated, species that have not been seen in Tennessee for the past 20 years.

(Adapted from the Committee for Tennessee Rare Plants. 1978. The rare and vascular plants of Tennessee. Journal of the Tennessee Academy of Sciences, 53(4):128-133.)

State Status Definitions of Tennessee's Rare Wildlife

State Status indicates which animals are formally listed as state endangered or threatened under the authority of the Tennessee Wildlife Resources Agency.

P - Possibly Extirpated
E - Endangered
T - Threatened
S - Special Concern
I - Inactive
D - Deemed in Need of Management
* - Species Proposed for Federal Protection

Site No. TN0001087188

Ref. No. 23

STATE OF TENNESSEE

FAX TRANSMITTAL MEMO

TO: Paul Bradshaw
C-EAC

FAX NUMBER:

FROM: John Weakley
NCO

SUBJECT:

DATE: 2-5-99

NUMBER OF PAGES INCLUDING THIS ONE: 2

IF YOU DO NOT RECEIVE THIS ENTIRE DOCUMENT OR HAVE ANY QUESTIONS, CALL

TELEPHONE NO.

MESSAGE:

Cnsus034.asc

1990 Census Data - Block Group Level
LAT: 0350000 LONG: 0851647

KM	0.00- 0.4	0.4- 0.8	0.8- 1.6	1.6- 3.2	3.2- 4.8	4.8- 6.4	TOTAL
RING	1381	287	8143	19909	37701	36077	103498
TOTALS							

1990 Census Data - Block Level
LAT: 0350000 LONG: 0851647

KM	0.00- 0.4	0.4- 0.8	0.8- 1.6	1.6- 3.2	3.2- 4.8	4.8- 6.4	TOTAL
RING	590	1918	6586	22287	35616	35942	102939
TOTALS							

OVERSIZED

DOCUMENT

s0B
095

OMB Approval Number: 2050-0

Approved for Use Through: 4/95

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: TN	CERCLIS Number: TN0001087188
	CERCLIS Discovery Date: 09/28/98	

1. General Site Information

Name:		Street Address:			
Chris Craft Corporation		3321 Dodds Avenue			
City:	State:	Zip Code:	County:	Co. Code:	Cong. Dist:
Chattanooga	TN	37407	Hamilton	33	3
Latitude: Longitude:		Approx. Area of Site:		Status of Site:	
35° 0' 10.0" 85° 16' 53.0"		7 acres		Active	

2. Owner/Operator Information

Owner:			Operator:		
Cherokee Warehouse/Hamilton County			same		
Street Address:			Street Address:		
520 West 31 Street					
City:			City:		
Chattanooga					
State:	Zip Code:	Telephone:	State:	Zip Code:	Telephone:
TN	37407	(423)756-5552			
Type of Ownership:			How Initially Identified:		
Private			RCRA/CERCLA Notification		

s3B

DRAFT
PRELIMINARY SCORE
NOT THE OPINION OF U.S. EPA

s0B

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: TN	CERCLIS Number: TN0001087188
	CERCLIS Discovery Date: 09/28/98	

3. Site Evaluator Information

Name of Evaluator:	Agency/Organization:	Date Prepared:
Paul Bradshaw	TDEC Superfund	02/20/99

Street Address:	City:	State:
540 McCallie Avenue Suite 550	Chattanooga	TN

Name of EPA or State Agency Contact:	Telephone:
John Weakley	(615) 532-0930

Street Address:	City:	State:
401 Church Street L&C Annex	Nashville	TN

4. Site Disposition (for EPA use only)

Emergency Response/Removal Assessment Recommendation: No	CERCLIS Recommendation: Higher Priority SI	Signature:
Date:	Date:	Name:
		Position:

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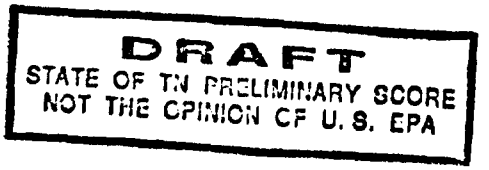

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POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: TN	CERCLIS Number: TN0001087188
	CERCLIS Discovery Date: 09/28/98	

5. General Site Characteristics

Predominant Land Uses Within 1 Mile of Site:	Site Setting:	Years of Operation:
Commercial Residential	Urban	Beginning Year: 1900 Ending Year: 1975

Type of Site Operations:	Waste Generated:
Manufacturing Lumber and Wood Products Other Manufacturing	Onsite
	Waste Deposition Authorized By: Former Owner
	Waste Accessible to the Public: No
	Distance to Nearest Dwelling, School, or Workplace: 0 Feet

6. Waste Characteristics Information

No Sources	General Types of Waste:
	Paints/Pigments
	Physical State of Waste as Deposited: Solid

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POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: TN	CERCLIS Number: TN0001087188
	CERCLIS Discovery Date: 09/28/98	

7. Ground Water Pathway

Is Ground Water Used for Drinking Water Within 4 Miles: No	Is There a Suspected Release to Ground Water: No	List Secondary Target Population Served by Ground Water Withdrawn From:
Type of Ground Water Wells Within 4 Miles: Private	Have Primary Target Drinking Water Wells Been Identified: No	0 - 1/4 Mile 0 >1/4 - 1/2 Mile 0 >1/2 - 1 Mile 0 >1 - 2 Miles 0 >2 - 3 Miles 0 >3 - 4 Miles 0 Total 0
Depth to Shallowest Aquifer: 0 Feet	Nearest Designated Wellhead Protection Area: None within 4 Miles	
Karst Terrain/Aquifer Present: Yes		

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POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: TN	CERCLIS Number: TN0001087188
	CERCLIS Discovery Date: 09/28/98	

8. Surface Water Pathway Part 1 of 4

Type of Surface Water Draining Site and 15 Miles Downstream:	Shortest Overland Distance From Any Source to Surface Water:
Stream River	0 Feet 0.0 Miles
Is there a Suspected Release to Surface Water: No	Site is Located in: Annual - 10 yr floodplain

8. Surface Water Pathway Part 2 of 4

Drinking Water Intakes Along the Surface Water Migration Path: No

Have Primary Target Drinking Water Intakes Been Identified: No

Secondary Target Drinking Water Intakes:
None

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POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: TN	CERCLIS Number: TN0001087188
	CERCLIS Discovery Date: 09/28/98	

8. Surface Water Pathway — Part 3 of 4

Fisheries Located Along the Surface Water Migration Path: Yes

Have Primary Target Fisheries Been Identified: No

Secondary Target Fisheries:

Fishery Name	Water Body Type/Flow(cfs)
Chattanooga Creek	moderate-large stream/ >100-1000
Tennessee River	large river/ >10000

3. Surface Water Pathway — Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) No

Have Primary Target Wetlands Been Identified? (y/n) No

Secondary Target Wetlands:
None

Other Sensitive Environments Along the Surface Water Migration Path: Yes

Have Primary Target Sensitive Environments Been Identified: No

Secondary Target Sensitive Environments:

Water Body/Flow(cfs)	Sensitive Environment Type
large river/ >10000	Habitat for Federally designated endanger

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POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM

IDENTIFICATION	
State: TN	CERCLIS Number: TN0001087188
CERCLIS Discovery Date: 09/28/98	

9. Soil Exposure Pathway

Are People Occupying Residences or Attending School or Daycare on or Within 200 Feet of Areas of Known or Suspected Contamination: Yes
Total Resident Population: 500

Number of Workers Onsite: 1 - 100

Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: No

10. Air Pathway

Total Population on or Within:	
Onsite	500
0 - 1/4 Mile	1381
>1/4 - 1/2 Mile	1918
>1/2 - 1 Mile	6586
>1 - 2 Miles	22287
>2 - 3 Miles	35616
>3 - 4 Miles	35942
Total	104230

Is There a Suspected Release to Air: No

Wetlands Located Within 4 Miles of the Site: No

Other Sensitive Environments Located Within 4 Miles of the Site: Yes

Sensitive Environments Within 1/2 Mile of the Site:

Distance	Sensitive Environment Type/Wetlands Area(acres)
Onsite	Habitat for Federally designated endangered/threatened species

OMB Approval Number: 2050-0095
Approved for Use Through: 4/95

PA-Score

PA Scoresheets

Site Name: Chris Craft Corporation
CERCLIS ID No.: TN0001087188
Street Address: 3321 Dodds Avenue
City/State/Zip: Chattanooga , TN 37407

Investigator: Paul Bradshaw
Agency/Organization: TDEC Superfund
Street Address: 540 McCallie Avenue Suite 550
City/State: Chattanooga , TN

Date: 02/20/99

s3B

s0B WASTE CHARACTERISTICS

Waste Characteristics (WC) Calculations:

** Only First WC Page Is Printed **	Waste Characteristics Score: WC = 0

s0B

Ground Water Pathway Criteria List
Suspected Release

Are sources poorly contained? (y/n/u)	U
Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? (y/n/u)	N
Is waste quantity particularly large? (y/n/u)	N
Is precipitation heavy? (y/n/u)	Y
Is the infiltration rate high? (y/n/u)	Y
Is the site located in an area of karst terrain? (y/n)	Y
Is the subsurface highly permeable or conductive? (y/n/u)	U
Is drinking water drawn from a shallow aquifer? (y/n/u)	N
Are suspected contaminants highly mobile in ground water? (y/n/u)	U
Does analytical or circumstantial evidence suggest ground water contamination? (y/n/u)	N

Other criteria? (y/n) N

SUSPECTED RELEASE? (y/n) N

Summarize the rationale for Suspected Release:

s0B

Ground Water Pathway Criteria List
Primary Targets

Is any drinking water well nearby? (y/n/u)

Has any nearby drinking water well been closed? (y/n/u)

Has any nearby drinking water well user reported foul-testing or foul-smelling water? (y/n/u)

Does any nearby well have a large drawdown/high production rate? (y/n/u)

Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance? (y/n/u)

Does analytical or circumstantial evidence suggest contamination at a drinking water well? (y/n/u)

Does any drinking water well warrant sampling? (y/n/u)

Other criteria? (y/n)

PRIMARY TARGET(S) IDENTIFIED? (y/n)

Summarize the rationale for Primary Targets:

s0B GROUND WATER PATHWAY SCORESHEETS

thway Characteristics		Ref.
Do you suspect a release? (y/n)	No	
Is the site located in karst terrain? (y/n)	Yes	
Depth to aquifer (feet):	0	
Distance to the nearest drinking water well (feet):	0	

LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	0		
2. NO SUSPECTED RELEASE		500	
LR =	0	500	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 0 person(s)	0		
4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) N	0	0	
5. NEAREST WELL	0	0	
6. WELLHEAD PROTECTION AREA None within 4 Miles	0	0	
7. RESOURCES	0	5	
T =	0	5	

WASTE CHARACTERISTICS

WC =	0	0

GROUND WATER PATHWAY SCORE: 0

s3B

s0B Ground Water Target Populations

Primary Target Population Drinking Water Well ID	Dist. (miles)	Population Served	Reference	Value
None				
*** Note : Maximum of 5 Wells Are Printed ***			Total	

Secondary Target Population Distance Categories	Population Served	Reference	Value
0 to 1/4 mile	0		0
Greater than 1/4 to 1/2 mile	0		0
Greater than 1/2 to 1 mile	0		0
Greater than 1 to 2 miles	0		0
Greater than 2 to 3 miles	0		0
Greater than 3 to 4 miles	0		0
		Total	0

s3B

s0B Apportionment Documentation for a Blended System

s3B

s0B

Surface Water Pathway Criteria List
Suspected Release

Is surface water nearby? (y/n/u)	Y
Is waste quantity particularly large? (y/n/u)	N
Is the drainage area large? (y/n/u)	U
Is rainfall heavy? (y/n/u)	Y
Is the infiltration rate low? (y/n/u)	U
Are sources poorly contained or prone to runoff or flooding? (y/n/u)	N
Is a runoff route well defined(e.g.ditch/channel to surf.water)? (y/n/u)	Y
Is vegetation stressed along the probable runoff path? (y/n/u)	N
Are sediments or water unnaturally discolored? (y/n/u)	N
Is wildlife unnaturally absent? (y/n/u)	N
Has deposition of waste into surface water been observed? (y/n/u)	N
Is ground water discharge to surface water likely? (y/n/u)	N
Does analytical/circumstantial evidence suggest S.W. contam? (y/n/u)	N
Other criteria? (y/n) N	
SUSPECTED RELEASE? (y/n)	N

Summarize the rationale for Suspected Release:

s0B

Surface Water Pathway Criteria List
Primary Targets

Is any target nearby? (y/n/u) If yes:	Y
N Drinking water intake	
Y Fishery	
Y Sensitive environment	
Has any intake, fishery, or recreational area been closed? (y/n/u)	N
Does analytical or circumstantial evidence suggest surface water contamination at or downstream of a target? (y/n/u)	N
Does any target warrant sampling? (y/n/u) If yes:	N
N Drinking water intake	
N Fishery	
N Sensitive environment	
Other criteria? (y/n) N	
PRIMARY INTAKE(S) IDENTIFIED? (y/n)	N

Summarize the rationale for Primary Intakes:

continued -------

s3B

s0B

continued -------

Other criteria? (y/n) N

PRIMARY FISHERY(IES) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Fisheries:

Other criteria? (y/n) N

PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Sensitive Environments:

s0B SURFACE WATER PATHWAY SCORESHEETS

thway Characteristics		Ref.
Do you suspect a release? (y/n)	No	
Distance to surface water (feet):	0	
Flood frequency (years):	1-10	
What is the downstream distance (miles) to: a. the nearest drinking water intake? b. the nearest fishery? c. the nearest sensitive environment?	 0.0 0.0 0.0	

LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	0		
2. NO SUSPECTED RELEASE		500	
LR =	0	500	

s2R

s0B Drinking Water Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
3. Determine the water body type, flow (if applicable), and number of people served by each drinking water intake.			
4. PRIMARY TARGET POPULATION 0 person(s)	0		
5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N	0	0	
6. NEAREST INTAKE	0	0	
7. RESOURCES	0	5	
T =	0	5	

Drinking Water Threat Target Populations

Intake Name	Primary (y/n)	Water Body Type/Flow	Population Served	Ref.	Value
None					

Total Primary Target Population Value	0
Total Secondary Target Population Value	0

*** Note : Maximum of 6 Intakes Are Printed ***

s3B

s0B Apportionment Documentation for a Blended System

s3B

s0B Human Food Chain Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
8. Determine the water body type and flow for each fishery within the target limit.			
9. PRIMARY FISHERIES	0		
10. SECONDARY FISHERIES	0	12	
T =	0	12	

Human Food Chain Threat Targets

Fishery Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Chattanooga Creek	N	>100-1000 cfs		12
2 Tennessee River	N	>10000 cfs		12

Total Primary Fisheries Value 0
Total Secondary Fisheries Value 24

*** Note : Maximum of 6 Fisheries Are Printed ***

s3B

s0B Environmental Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
11. Determine the water body type and flow (if applicable) for each sensitive environment.			
12. PRIMARY SENSITIVE ENVIRONMENTS	0		
13. SECONDARY SENSITIVE ENVIRONS.	0	10	
T =	0	10	

Environmental Threat Targets

Sensitive Environment Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Macellan Island	N	>10000 cfs		12

Total Primary Sensitive Environments Value 0
Total Secondary Sensitive Environments Value 0
*** Note: Maximum of 6 Sensitive Environments Are Printed ***

s3B

s0B Surface Water Pathway Threat Scores

Threat	Likelihood of Release(LR) Score	Targets(T) Score	Pathway Waste Characteristics (WC) Score	Threat Score LR x T x WC / 82,500
Drinking Water	500	5	0	0
Human Food Chain	500	12	0	0
Environmental	500	10	0	0

SURFACE WATER PATHWAY SCORE: 0

s3B

s0B

Soil Exposure Pathway Criteria List
Resident Population

Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination? (y/n/u)	Y
Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator? (y/n/u)	U
Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities? (y/n/u)	N
Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems? (y/n/u)	N
Does any neighboring property warrant sampling? (y/n/u)	N
Other criteria? (y/n)	N
RESIDENT POPULATION IDENTIFIED? (y/n)	Y

Summarize the rationale for Resident Population:

s3B

s0B SOIL EXPOSURE PATHWAY SCORESHEETS

thway Characteristics		Ref.
Do any people live on or within 200 ft of areas of suspected contamination? (y/n)	Yes	
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n)	Yes	
Is the facility active? (y/n):	Yes	

LIKELIHOOD OF EXPOSURE	Suspected Contamination	References
1. SUSPECTED CONTAMINATION LE =	550	

Targets

2. RESIDENT POPULATION 0 resident(s) 500 school/daycare student(s)	0	
3. RESIDENT INDIVIDUAL	0	
4. WORKERS 1 - 100	0	
5. TERRES. SENSITIVE ENVIRONMENTS	0	
6. RESOURCES	0	
T =	0	

WASTE CHARACTERISTICS

WC = 0

RESIDENT POPULATION THREAT SCORE: 0

NEARBY POPULATION THREAT SCORE: 2

Population Within 1 Mile: 10,001 - 50,000

SOIL EXPOSURE PATHWAY SCORE: 2

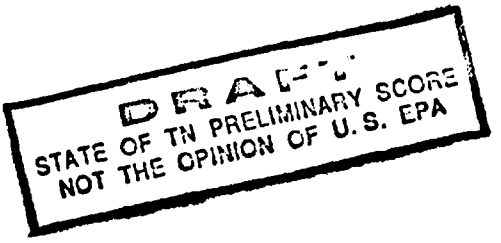
DRAFT
STATE OF TN PRELIMINARY SCORE
NOT THE OPINION OF U.S. EPA

s0B Soil Exposure Pathway Terrestrial Sensitive Environments

Terrestrial Sensitive Environment Name	Reference	Value
None		
Total Terrestrial Sensitive Environments Value		

*** Note : Maximum of 7 Sensitive Environments Are Printed ***

s3B



s0B

Air Pathway Criteria List
Suspected Release

Are odors currently reported? (y/n/u)	N
Has release of a hazardous substance to the air been directly observed? (y/n/u)	N
Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air? (y/n/u)	N
Does analytical/circumstantial evidence suggest release to air? (y/n/u)	N
Other criteria? (y/n) N	
SUSPECTED RELEASE? (y/n)	N

Summarize the rationale for Suspected Release:

s3B

s0B

AIR PATHWAY SCORESHEETS

hway Characteristics		Ref.
Do you suspect a release? (y/n)	No	
Distance to the nearest individual (feet):	0	

LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	0		
2. NO SUSPECTED RELEASE		500	
LR =	0	500	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 0 person(s)	0		
4. SECONDARY TARGET POPULATION	0	137	
5. NEAREST INDIVIDUAL	0	20	
6. PRIMARY SENSITIVE ENVIRONS.	0		
7. SECONDARY SENSITIVE ENVIRONS.	0	0	
8. RESOURCES	0	5	
T =	0	162	

WASTE CHARACTERISTICS

WC =	0	0

AIR PATHWAY SCORE:	0

s3B

DRAFT
STATE OF TN PRELIMINARY SCORE
NOT THE OPINION OF U.S. EPA

s0B Air Pathway Secondary Target Populations

Distance Categories	Population	References	Value
Onsite	500		52
Greater than 0 to 1/4 mile	1381		41
Greater than 1/4 to 1/2 mile	1918		9
Greater than 1/2 to 1 mile	6586		8
Greater than 1 to 2 miles	22287		8
Greater than 2 to 3 miles	35616		12
Greater than 3 to 4 miles	35942		7
	Total Secondary Population Value		137

s3B

s0B Air Pathway Primary Sensitive Environments

Sensitive Environment Name	Reference	Value
None		
Total Primary Sensitive Environments Value		

*** Note : Maximum of 7 Sensitive Environments Are Printed***

Air Pathway Secondary Sensitive Environments

Sensitive Environment Name	Distance	Reference	Value
1	onsite		0.0
Total Secondary Sensitive Environments Value			

s3B

s0B

TE SCORE CALCULATION	SCORE
GROUND WATER PATHWAY SCORE:	0
SURFACE WATER PATHWAY SCORE:	0
SOIL EXPOSURE PATHWAY SCORE:	2
AIR PATHWAY SCORE:	0
SITE SCORE:	1

s3B

s0B
SUMMARY

1. Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water? No

   If yes, identify the well(s).

   If yes, how many people are served by the threatened well(s)? 0

2. Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water?
   A. Drinking water intake No
   B. Fishery No
   C. Sensitive environment (wetland, critical habitat, others) No

   If yes, identity the target(s).

3. Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility? No

   If yes, identify the properties and estimate the associated population(s)

4. Are there public health concerns at this site that are not addressed by PA scoring considerations? No

   If yes, explain:

s3B

REFERENCE LIST

1. U. S. Geological Survey. Chattanooga/East Chattanooga/East Ridge/Ft. Oglethorpe Quadrangles, 7.5 Minute Series (Topographic). 1957 &1988.

2. National Flood Insurance Program Flood Insurance Rate Map City of Chattanooga, Tennessee Hamilton County. Panel 26 of 30. September 3, 1980.

3. State of Tennessee. Tennessee Blue Book 1991-1994. 1991.

4. U.S. Department of Commerce. "Rainfall Frequency Atlas of the United States, Technical Paper No.40". May 1961.

5. USDA. 1982. Soil Survey of Hamilton County, Tennessee. United States Department of Agriculture, Soil Conservation Service.

6. Hamilton County, Tennessee. Bicentinial Library. Chattanooga City Directories

7. Hamilton County, Tennessee. Bicentinial Library. Newspaper Clippings

8. Hamilton County, Tennessee. Register of Deeds. Property Deed

9. Chattanooga Times. 10/08/98

10. Ground Engineering and Testing Service Report Project # 1412-A.

11. DeBuchananne, Richardson. Tennessee Divison of Geology, Groundwater Resources of East Tennessee, Bulletin 58, 1956.

12. Tennessee Division of Geology. Geologic Map of the Chattanooga Tennessee Quadrangle.

13. Caruthers, G. (TDHE) Memo regarding private wells in Chattanooga. November 25, 1986

14. Tennessee Division of Water Supply. "Public Water System Data/Tennessee American Water Company". December 5, 1990.

15. Stannard, C.J. (TDGWP). Memo regarding industrial wells in Chattanooga, TN. November 19, 1987.

16. City of Chattanooga. Department of Public Works. Letter regarding stormwater drainage East Lake Middle School.

17. U.S. Department of Interior, Geological Survey. 1970-1974. "Water Resources Data for Tennessee".

18. Stannard, C.J. (TDSF) Memo regarding wetlands and stream flow. April 24, 1992.

19. State of Tennessee Water Quality Standards. December 1991.

20. Tennessee Wildlife Resources Agency. "Creel Data For Nickajack Lake". 1991.

21. Speer, I.M. (TDSF) Memo regarding fish harvest from local fisheries. October 20, 1996.

22. Tennessee Ecological Services Division. "Endangered Species of Hamilton County", January 31, 1989.

23. Lan View II Population Data Report

rec'd 10/20/98 EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE IDENTIFICATION ("DISCOVERY")

I. IDENTIFICATION

01 ST	02 SITE NUMBER
TN	0001087188

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common or descriptive name of site)	02 STREET, ROUTE NUMBER, OR SPECIFIC LOCATION IDENTIFIER				
Chris Craft	3321 Dodds Avenue				
03 CITY	**04 ST**	**05 ZIP CODE**	**06 COUNTY**	**07 CO CODE**	**08 CONG DIST**
Chattanooga	TN	37407	Hamilton	33	03

09 DIRECTIONS TO SITE (Starting from nearest public road, enter up to 4 lines of text)

From Chattanooga travel east on Interstate 24 to the Rossville Blvd. South exit.Go south on Rossville Blvd to East 34th street. Turn left on to East 34th Street untill it intersects Dodds Avenue. Turn left on to Dodds Ave. The facility is located at the intersection of Dodds Avenue and East 33rd Street.
Lat.: 35.00',15" Long.: 85, 18',15"

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, residential, mailing)			
Cherokee Warehouses Inc.	520 West 31st Street			
03 CITY	**04 ST**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**	
Chattanooga	TN	37407	(423) 756-5552	
07 OPERATOR (If known and different from owner)	**08 STREET (Business, residential, mailing)**			
Chris Craft				
09 CITY	**10 ST**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**	

13 TYPE OF OWNERSHIP (Mark one, use "insert" mode)

X A. PRIVATE _ B. FEDERAL (Agency name): _____ _ C. STATE _ D. COUNTY
_ E. MUNICIPAL _ F. OTHER (Specify): _____ _ G. UNKNOWN

IV. HOW IDENTIFIED

01 DATE IDENTIFIED	02 IDENTIFIED BY (Mark all that apply, use "insert" mode)
9/28/98 (Month/Day/Year)	_ A. CITIZEN COMPLAINT _ B. INDUSTRY X C. STATE/LOCAL GOVERNMENT _ D. AERIAL RECONNAISSANCE _ E. RCRA INSPECTION _ F. SURFACE IMPOUNDMENT ASSESSMENT _ G. OTHER EPA IDENTIFICATION X H. OTHER (Specify): City Directory Search

V. SITE CHARACTERIZATION

01 TYPE OF SITE (Mark all that apply, use "insert" mode)

_ A. STORAGE _ B. TREATMENT _ C. DISPOSAL _ D. UNAUTHORIZED DUMPING x E. OTHER (Specify): Boat Manufacturing

02 SUMMARY OF KNOWN PROBLEMS (Provide narrative description, enter up to 6 lines of text)

Wooden and fiberglass boat manufacturer operated from 1950 until 1977.

03 SUMMARY OF ALLEGED OR POTENTIAL PROBLEMS (Provide narrative description, enter up to 5 lines of text)

Possible improper industrial waste disposal practices.

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)			03 TELEPHONE NUMBER
Paul Bradshaw	TN. Division of Superfund			(423) 634-5757
04 PREPARED BY	**05 AGENCY**	**06 ORGANIZATION**	**07 TELEPHONE NUMBER**	**08 DATE (Month/Day/Year)**
Paul Bradshaw	TNDSF	TNDEC	(423) 634-5757	9/28/98

EPA FORM 2070-11 (07/81). Revised by EPA/Rgn 3/SAS/KJW (09/94)

CONTOUR INTERVAL 20 FEET

DATUM IS MEAN SEA LEVEL

CONTOURS
1929

STANDARDS
225, OR RESTON, VIRGINIA 22092
LOGY, NASHVILLE, TENN. 37243
OOGA, TENN. 37401

To place on the predicted North American Datum 1983.

CHATTANOOGA, TI
35085-A3-TF-024

Chatt Times 10/8/98 Thurs

Pit full of paint found at school

Cleanup delays construction

By Judy Walton
The Chattanooga Times

A pit full of old — very old — paint has slowed work on the new Eastlake Elementary School.

Workers at the school site on Dodds Avenue recently uncovered a 30- by 60-foot pit filled with wooden barrels containing lead-based paint.

Gary Waters, facilities director of the Hamilton County Schools, said nobody knows how the barrels got there or when. But such a discovery isn't unexpected on a brownfields site like this one.

The schools will look back through property records to identify former owners. If liability can be established, the guilty party could be charged for the cleanup.

Waters hesitated to estimate a cost, but said, "It would be safe to say it would be in the six figures."

The work will have to be done by a special contractor under a permit from the state Department of Environment and Conservation. Waters said bids will be solicited next week, and he expects the Hamilton County Commission to pick a contractor at the Nov. 4 meeting.

When the paint was found, work stopped so the substance could be tested. The contractor will have to determine the extent of the contamination.

Tests showed the paint has not contaminated groundwater, Waters said. There won't be any harm to the neighborhood or the children who will go to school there, he said.

"It's no more of a danger today than it has been for the last 30 or 40 years, however long it's been there."

He estimated the cleanup will take two to three weeks once a contractor is picked. It will delay school construction, but some delay is built into the schedule, Waters said.